PRECONSTRUCTION

ROADWAY DESIGN

Unit contact: William Akabi-Davis (919) 707-6211

wakabidavis@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
201	Rural Roadway Design	Entry level for smaller and less complex projects, i.e. bridge replacement projects, safety projects and rural widening projects.	Roadway Engineer	P.E.		P.E.	Must submit sample plans showing sufficient design capacity, including horizontal and vertical alignments with curve data, design information for intersections and interchanges, typical sections and cross sections. Statement of CADD capability – Microstation/Geopack Software is required, including names of CADD users/technicians.
269	Urban Roadway Design	More complex urban widening and new location projects with increased project impact restrictions due to dense residential and/or commercial development.	Roadway Engineer	P.E.		P.E.	Must submit sample plans showing sufficient design capacity, including horizontal and vertical alignments with curve data, design information for intersections and interchanges, typical sections and cross sections. Statement of CADD capability – Microstation/Geopack Software is required, including names of CADD users/technicians.
126	Interchange Design	Required for any projects that have interchanges in the scope of work.	Roadway Engineer	P.E.		P.E.	Must submit sample plans showing sufficient design capacity, including horizontal and vertical alignments with curve data, design information for intersections and interchanges, typical sections and cross sections. Statement of CADD capability – Microstation/Geopack Software is required, including names of CADD users/technicians.
314	Roadway Lighting	Roadway lighting layout design for fully controlled-access interchanges and for continuous sections between interchanges. Design utilizes a combination of high mast light standards, shoulder mount light standards, median mount light standards, underpass lighting if needed,	Roadway Engineer	P.E.		P.E.	Must meet the “Necessary Expertise” stated in the AASHTO Roadway Lighting Design Guide, dated October 2005. Must submit sample of work, including lighting construction plans, corresponding lighting photometric plans using lighting design software and sample voltage drop calculation for circuit design.

		light control and circuitry to meet the AASHTO lighting requirements.					
467	Low Impact Division Managed Roadway Design	Entry level design for smaller and less complex projects, i.e. bridge replacement projects, safety projects and rural widening projects advertised at the Division level.	Roadway Engineer	P.E.		P.E.	Must submit sample plans showing sufficient design capability including horizontal and vertical alignments with curve data, design information for intersections and interchanges, typical sections and cross sections. Statement of CADD capability including software type and names with experience level of CADD users/technicians is required. Firms without Microstation/Geopack capability will be limited to Division let projects. Firms with Microstation/Geopack capability will be qualified for Division projects that are centrally let (Division projects with construction costs exceeding $1,200,000.00).

PRECONSTRUCTION

LOCATION AND SURVEYS

Unit contact: **James Dodson** **(919) 707-6800**

jdodson@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
92	GPS	Global Positioning System Surveying	Land Surveyor	P.L.S.		L.S.	Must submit a list of GPS surveying equipment, an example of a static network adjustment (not VRS or Opus) showing a diagram of your network, raw coordinates, closures and adjusted coordinates and a GPS site calibration or site localization.)
235	SUE	Subsurface Utility Engineering	Land Surveyor	P.L.S.		L.S.	Must submit a list of SUE surveying equipment including surface geophysical location equipment and non-damaging excavating equipment.
199	Route Location Surveys	Conventional Surveying	Land Surveyor	P.L.S.		L.S.	Must submit a list of conventional surveying equipment and an example of a route survey – the example must have a tie to control monumentation and must have bearing distances and curve data on the alignment. Either a hard copy or electronic PDF of the plans is acceptable. Hard copy should be no more than 2 pages, preferable 11” x 17” or smaller, and the text must be legible.
104	High Density Laser Scanner	High Density Laser Scanner	Land Surveyor	P.L.S.		L.S.	Must submit a list of High Density Laser Scanning equipment.
112	Hydrographic Surveys	Hydrographic Surveys	Land Surveyor	P.L.S.		L.S.	Must submit a list of hydrographic surveying equipment which must include a boat equipped with a sonar integrated with a GPS receiver.

PRECONSTRUCTION **Unit contact:** **Brian Radakovic (919) 707-6747**

HYDRAULIC DESIGN bmradakovic@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
433	Tier I Basic Hydrologic and Hydraulic Design	a) Roadway drainage design, including ditches, small pipe culverts, storm sewer systems, outfall analysis, drainage investigations, etc… b) Bridge and/or culvert design over streams using the Federal Highway Administration (FHWA) design guidelines, such as Hydraulic Design Series 5, 7, HY-8, HEC-Ras, etc… c) Drainage design using the North Carolina Department of Transportation "Stormwater Best Management Practices Toolbox" or similar.	Hydraulic/ Hydrologic Engineer	P.E.	3	P.E.	1. Submit samples of the approved design reports and/or hydraulic calculations/models for a, b and c. 2. Submit resumes/work experience of all key staff. 3. Proof of work experience may be waived by the State Hydraulics Engineer for Engineers who have worked at NCDOT Hydraulics Unit as an Engineering Supervisor and/or Engineer with a minimum of five (5) years in review and/or design of hydrologic and hydraulic projects in the Unit.

434	Tier II Complete Hydrologic and Hydraulic Design	a) Tier I, plus: b) Design of bridges and culverts over FEMA regulated streams that require coordination and approvals from FEMA or their designees. c) Experience evaluating scour and stream instability using FHWA guidance such as HEC 18, HEC 20 and HEC 23.	Hydraulic/ Hydrologic Engineer	P.E.	8	P.E.	1. Meet all the requirements of a, b, and c. Submit samples of b and c. 2. Submit resumes/work experience of all key staff. 3. Firm is required to prepare drainage plans using current NCDOT CADD standards and Drainage Software. 4. Proof of work experience may be waived by the State Hydraulics Engineer for Engineers who have worked at NCDOT Hydraulics Unit as an Engineering Supervisor and/or Engineer with a minimum of 10 years in review and/or design of hydrologic and hydraulic projects in the Unit.
479	Tier III Complex Hydraulic Design	a) Tier I and Tier II, plus: b) Two-dimensional (2D) hydraulic modeling design experience for bridges over streams that are under the influence of turbulent, unsteady flow, etc...	Hydraulic/ Hydrologic Engineer	P.E.	8	P.E.	1. Meet all the requirements of Tier II. 2. Submit resumes/work experience of all key staff. 3. Submit samples of the approved design reports and design models using 2-D hydraulic modeling.
480	Highway Floodplain Program Support	Extensive knowledge of the National Flood Insurance Program. Extensive experience in hydraulic model design and community flood map revision or creation for FEMA or a designee of FEMA. Experience reviewing hydraulic models for bridges and/or culverts over FEMA regulated streams.	Hydraulic/ Hydrologic Engineer	P.E. CFM	8	P.E.	1. Submit samples of the approved reviews, designs and maps while under contract with FEMA and/or their designees. 2. Submit resumes/ work experience of all key staff. 3. Firm is required to have and use current NCDOT CADD standards. 4. Certified Floodplain Manager (CFM) required.

481	NPDES Stormwater Permit Programmatic Support	Extensive knowledge of the USEPA's NPDES stormwater program and experience assisting MS4s in implementation of NPDES permit stormwater programs. Experience negotiating NPDES permit language with regulatory agencies, administering and overseeing the implementation of NPDES compliance programs, preparation of NPDES annual reports, preparation of fiscal year program business/work plans, designing and performing internal program self-assessment audits, managing water quality research projects, development of NPDES internal education programs for MS4 staff and contractors, and development of information technology solutions to support delivery of NPDES programs.	Hydraulic/ Hydrologic Engineer, Environmental Scientist, Biologist/Ecologist, IT Specialist	P.E.	8	P.E.	1. Submit samples of work demonstrating NPDES programmatic support for MS4 NPDES programs. 2. Proof of work experience may be waived by the State Hydraulics Engineer for Engineers who have worked at NCDOT Hydraulics Unit as an Engineering Supervisor and/or Engineer - Advanced with a minimum of 10 years in managing and reviewing NPDES compliance tasks in the Unit.
482	Coastal Hydraulic Engineering	Extensive knowledge and experience of coastal hydrodynamics and simulation models using RMA2 (Resource Management Associates), ADCIRC (Advanced Circulation Model for Coastal Ocean Hydrodynamics), SWAN (Simulation Waves Near Shore) software or similar state-of-the-art hydrodynamic modelling techniques for coastal resources.	Hydraulic/ Hydrologic Engineer	P.E.	8	P.E.	1. Submit samples of the approved design reports and hydraulic models in the coastal areas. 2. Submit resumes/ work experience of all key staff.

553	NPDES Stormwater Program - Industrial Facility Compliance and Asset Inventory	a) Experience preparing stormwater pollution prevention plans (SPPPs) and spill prevention, control, and countermeasure (SPCC) plans for industrial facilities. Experience developing and delivering stormwater pollution prevention training for industrial facility staff. b) Experience with geospatial field mapping of industrial facility assets, stormwater conveyance systems and outfalls draining roadways and industrial facilities. c) Experience identifying waters of the US for the purposes of outfall identification and Clean Water Act compliance.	Hydraulic/ Hydrologic Engineer, Geologist, Biologist/ Ecologist, GIS Specialist	P.E.	3	P.E.	1. Submit samples of SPPPs and SPCC plans prepared by the firm. 2. Demonstration of experience preparing and delivering stormwater pollution prevention training. 3. Submit examples of asset inventory maps prepared by the firm which demonstrate field geospatial data collection capabilities. Maps should include stormwater conveyance system features and outfalls. Prequalification under discipline code 280 preferred.
554	NPDES Stormwater Program - Water Quality Modeling Support and TMDL Compliance	Experience developing and applying water quality models to support regulatory compliance. Relevant experience includes the application of watershed and surface water models such as, but not limited to, HSPF, WASP, SWMM, EFDC, WARMF, SWAT, and SELDM. Review of model applications developed by third parties. Preparation of modeling reports and TMDL compliance plans.	Hydraulic/Hydrologic Engineer, Environmental Scientist	P.E.	5	P.E.	1. Submit samples of work demonstrating water quality model development and application. 2. Submit samples of work demonstrating TMDL compliance support for regulated entries.

555	NPDES Stormwater Program-BMP Retrofit Site Selection and Design	a) Experience locating potential retrofit sites using a combination of desktop and field evaluation techniques. b) Experience preparing BMP construction drawings, pollutant load calculations and management of databases for the storage, retrieval, and reporting of site assessment information. c) Experience with BMP construction engineering and inspection.	Hydraulic/Hydrologic Engineer, Biologist/Ecologist, Soil Science Engineer	P.E.	3	P.E.	1. Submit samples of work that were approved by Local, State or Federal Agencies. 2. BMP inspection and maintenance certification preferred. 3. Prequalification under discipline code 433 required.

STRUCTURE MANAGEMENT Unit contact: Melissa Flores (919) 707-6406

PRECONSTRUCTION – BRIDGE DESIGN

mflores@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
23	Bridges – Spans Over 200’		Two (2) Bridge Design Engineers	One (1) P.E.		P.E.	An example of highway bridge plans may be required, depending on past experience shown in Key Personnel’s resume(s).
24	Bridges – Spans Under 200’		Two (2) Bridge Design Engineers	One (1) P.E.		P.E.	An example of highway bridge plans may be required, depending on past experience shown in Key Personnel’s resume(s).

STRUCTURE MANAGEMENT Unit contact: Melissa Flores (919) 707-6406

STRUCTURE MANAGEMENT mflores@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
329	Electrical & Mechanical Design for Moveable Bridge Systems	Provide inspection, rehabilitation, troubleshooting and design for electrical and mechanical systems on moveable span bridges.	One (1) Electrical and One (1) Mechanical Engineer	P.E.	10	P.E.	Must submit examples of work over the past 10 years that indicate experience with electrical and mechanical systems on moveable span bridges.
319	Load Testing & Finite Analysis	Field Load Testing and Finite Element Modeling of Structures	Two (2) Engineers	One (1) P.E.	5	P.E.	Must demonstrate that it has Field Tested a minimum of five (5) structures. Must submit samples of work including calculations, finite element models and load test results. Firm is responsible for turnkey job including trucks and traffic control for the field load test.
444	Load Rating	Load Rating of NBIS Structures	Two (2) Engineers	One (1) P.E.	3	P.E.	Must submit samples of work. Firm may be required to demonstrate ability to perform finite element analysis, rate gusset plates, rate curved girder bridges, rate segmental bridges, and rate cable stayed bridges and rate reinforced concrete box culverts. Must submit results in a format that is compatible with NCDOT Standards.
143	NBIS Bridge Inspection	NBIS Safety Inspection of Bridges	Team Leader(s)	P.E.		P.E.	Non-PE Inspection Team Leaders must have at least five (5) years of bridge safety inspection experience and must have successfully completed the NHI two week Safety Inspection of In-Service Bridges Course 130055. PE Team Leaders must have successfully completed the NHI two week Safety Inspection of In-Service Bridges Course 130055. Firm must demonstrate its ability to perform inspections using the NCDOT WIGINS program.
486	Structure Durability Analysis/Condition Assessment	Provide service life evaluation of bridges	Engineer	P.E.	10	P.E.	Must submit examples of work over the past 10 years that indicate experience with the use of numerical modeling software to provide probabilistic assessment of residual service life.

STRUCTURE MANAGEMENT

Unit contact: **Melissa Flores** **(919) 707-6406**

STRUCTURE MANAGEMENT mflores@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
487	Non Destructive Testing & Evaluation	Testing and evaluation of bridge deterioration	Engineer	P.E.	10	P.E.	Must submit examples of work over the past 10 years that indicate experience with the use of NDT/NDE techniques (GPR, IR, UT, laser measurement, etc) to determine deterioration levels of bridge decks, superstructure and substructure.
488	Structure Health Monitoring		Engineer	P.E.	10	P.E.	Must submit examples of work over the past 10 years that indicate experience with instrumentation, detailed interpretation of results, and recommendations on load rating and/or safety of highway structures.
489	Bridge Painting QA/QC	Construction engineering and inspection	Project Manager	PE and NACE Level III	10	P.E.	Technicians performing work shall have a minimum of 12 months field painting inspection experience, be NACE Level I certified (or equivalent), and have completed the NCDOT M&T Inspector Level I Certification course.
537	Asset Management System Implementation	Engineering support for related functionality in the Department's Asset Management System (AMS)	Team Leader	One (1) P.E.	5	P.E.	Demonstrate experience in Asset Management System functionality.
538	Bridge Management Best Practices	Engineering support for structures related functionality in the Department's Asset Management System (AMS)	Team Leader	One (1) P.E.	5	P.E.	Demonstrate experience in both Asset Management System functionality and expertise in bridge management best practices.

PRECONSTRUCTION

VISUALIZATION

Unit contact: **David Hinnant (919) 707-7050**

dbhinnant@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
276	Visualization	Renderings - 2D images created from 3D models of the proposed project using CADD data in programs such as Microstation and Autodesk 3ds Max.					Three (3) examples from different Highway/Transportation projects.
		Photosimulations – Renderings that are superimposed and blended into an existing site photo, including post processing work in programs such as Adobe Photoshop.					Three (3) examples from different Highway/Transportation projects.
		Animations - A video product produced by rendering 24-30 images/frames per second, most often used to show a flyover or drive thru of a project, including post processing through programs such as Adobe Premiere or After Effects.					Three (3) examples from different Highway/Transportation projects.

PRECONSTRUCTION Unit contact: Chris Chen (919) 707-6876

GEOTECHNICAL ENGINEERING SERVICES

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Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
294	Roadway Foundation Investigation & Design		Geotechnical Engineer	P.E.	5	P.E.	At least one (1) key person that is a permanent employee of the firm is required for each role. For each key person, submit two (2) examples of DOT or similar work sealed by the key person and completed within the last three (3) years. Drilling contractor/ subcontractor must be prequalified for work code 3050: Drilling for Geotechnical Investigations, and equipment must be able to access wooded and overgrown areas, obtain N and H size cores and drill 120ft SPT borings and 200ft mud borings.
			Project Geologist or Geological Engineer	L.G. or P.E.	5		
295	Structure Foundation Investigation & Design	Shallow and Deep Foundations	Geotechnical Engineer	P.E.	5	P.E.	At least one (1) key person that is a permanent employee of the firm is required for each role. For each key person, submit one (1) shallow or driven pile foundation example and one (1) deep foundation example other than driven piles of DOT or similar work that are in accordance with the *AASHTO LRFD Bridge Design Specifications,* were sealed by the key person and completed within the last three (3) years. Drilling contractor/subcontractor must be prequalified for work code 3050: Drilling for Geotechnical Investigations, and equipment must be able to access wooded and overgrown areas, obtain N and H size cores and drill 120ft SPT borings and 200ft mud borings.
			Project Geologist or Geological Engineer	L.G. or P.E.	5		
296	Retaining Wall Investigation & Design	Post-Bid Design Retaining Walls	Geotechnical Engineer	P.E.	5	P.E.	At least one (1) key person that is a permanent employee of the firm is required for each role. For each key person, submit one (1) cut wall example and one (1) fill wall example that have at least 1500sf of wall face area. Submit examples of DOT or similar work sealed by the key person and completed within the last three (3) years. Drilling contractor/subcontractor must be prequalified for work code 3050: Drilling for Geotechnical Investigations, and equipment must be able to access wooded and overgrown areas, obtain N and H size cores and drill 120ft SPT borings and 200ft mud borings.
			Project Geologist or Geological Engineer	L.G. or P.E.	5		

PRECONSTRUCTION Unit contact: Chris Chen (919) 707-6876

GEOTECHNICAL ENGINEERING SERVICES

cchen@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
297	Pavement Design Investigation	Subgrade Design and Chemical Stabilization	Geotechnical Engineer	P.E.	5	P.E.	At least one (1) key person that is a permanent employee of the firm is required for each role. For each key person, submit an example of DOT or similar work for each description of work sealed by the key person and completed within the last three (3) years. Experience with using dynamic cone penetrometers, collecting load cell data, and recovering pavement cores using thin walled core barrels is required. Drilling contractor/subcontractor must be prequalified for work code 3050: Drilling for Geotechnical Investigations, and equipment must be able to complete 20 pavement cores per rig per day, obtain 4” to 6” dia. pavement cores up to 24” thick and drill pavement borings to a depth of 20 ft.
			Project Geologist or Geological Engineer	L.G. or P.E.	5		

PRECONSTRUCTION

Unit contact: **Cyrus Parker (919) 707-6868**

GEOENVIRONMENTAL SERVICES

cfparker@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
330	Hazardous Waste Site Analysis & Remediation		Geoenvironmental Geologist/Engineer	L.G. or P.E.	5	L.G. or P.E.	At least one (1) key person that is a permanent employee of the firm is required for the geologist or engineer. For each key person, submit two (2) examples of DOT or similar work sealed by the key person and completed within the last three (3) years. Experience with hazardous waste sites, landfills, underground storage tanks, brownfields or dry cleaning solvent remediation in North Carolina is required.

PRECONSTRUCTION

Cyrus Parker (919) 707-6868

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GEOPHYSICAL SERVICES

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
305	Geophysical Services	Ground Penetrating Radar (GPR), Seismic Refraction/Reflection, Resistivity, Electromagnetic (EM), etc.	Geophysicist		5		At least one (1) key person that is a permanent employee of the firm is required for the geophysicist. For each key person, submit an example of DOT or similar work for two (2) different descriptions of work completed by the key person within the last three (3) years.

PRECONSTRUCTION Unit contact: Chris Chen (919) 707-6876

GEOTECHNICAL SPECIALTY SERVICES

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Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
298	Ground Improvement Design	Dynamic Compaction, Grouting, Stone Columns, Wick Drains, etc.	Geotechnical Engineer	P.E.	10	P.E.	At least one (1) key person that is a permanent employee of the firm is required for the geotechnical engineer. For each key person, submit an example of DOT or similar work for two (2) different descriptions of work sealed by the key person and completed within the last three (3) years.
299	Cantilever Retaining Wall Design	Sheet Pile, Cantilever Concrete, Pile Panel and Soldier Pile Retaining Walls.	Geotechnical Engineer	P.E.	5	P.E.	At least one (1) key person that is a permanent employee of the firm is required for the geotechnical engineer. For each key person, submit an example of DOT or similar work for two (2) different descriptions of work that are in accordance with the *AASHTO LRFD Bridge Design Specifications,* were sealed by the key person and completed within the last three (3) years.
300	Anchored Retaining Wall Design	Anchored (Tieback) Retaining Walls and Shoring, Soil Nail Retaining Walls and Temporary Soil Nail Walls	Geotechnical Engineer	P.E.	5	P.E.	At least one (1) key person that is a permanent employee of the firm is required for the geotechnical engineer. For each key person, submit one (1) anchored shoring or anchored retaining wall example that is in accordance with the *AASHTO LRFD Bridge Design Specifications* and one (1) soil nail retaining wall or temporary soil nail wall example that is in accordance with the *FHWA Geotechnical Engineering Circular No. 7 "Soil Nail Walls"*. Submit examples of DOT or similar work sealed by the key person and completed within the last three (3) years.
301	Dam Investigation, Evaluation & Design		Geotechnical Engineer	P.E.	10	P.E.	At least one (1) key person that is a permanent employee of the firm is required for each role. For each key person, submit two (2) examples of DOT or similar work sealed by the key person and completed within the last three (3) years. Drilling contractor/ subcontractor must be prequalified for work code 3050: Drilling for Geotechnical Investigations, and equipment must be able to access wooded and overgrown areas, obtain N and H size cores and drill 120ft SPT borings and 200ft mud borings.
			Project Geologist or Geological Engineer	L.G. or P.E.	5		

Revised as of 3/30/18

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
302	Landslide Investigation, Evaluation & Mitigation Design		Geotechnical Engineer	P.E.	10	P.E.	At least one (1) key person that is a permanent employee of the firm is required for each role. For each key person, submit two (2) examples of DOT or similar work sealed by the key person and completed within the last three (3) years. Drilling contractor/ subcontractor must be prequalified for work code 3050: Drilling for Geotechnical Investigations, and equipment must be able to access wooded and overgrown areas, obtain N and H size cores and drill 120ft SPT borings and 200ft mud borings.
			Project Geologist or Geological Engineer	L.G. or P.E.	5		
303	Rock Slope Investigation, Evaluation & Design	Rock Slope Design and Stabilization (Rock Bolts, Rock Slope Drapes, Rockfall Barriers, etc.)	Geotechnical Engineer	P.E.	10	P.E.	At least one (1) key person that is a permanent employee of the firm is required for each role. For each key person, submit one (1) rock slope design example and one (1) rock slope stabilization example of rock slopes taller than 50ft and steeper than 1:1 (H:V). Submit examples of DOT or similar work sealed by the key person and completed within the last three (3) years. Successful completion of at least 1,000ft of rock coring within the last three (3) years and experience with a down hole camera is required. Drilling contractor/subcontractor must be prequalified for work code 3050: Drilling for Geotechnical Investigations, and equipment must be able to access wooded and overgrown areas, obtain N and H size cores and drill 120ft SPT borings and 200ft mud borings.
			Project Geologist or Geological Engineer	L.G. or P.E.	10		
304	Rock Blasting Evaluation & Design	Production, Controlled, Trim, Trench and Secondary Blasting and Pre-Splitting	Geotechnical Engineer	P.E.	10	P.E.	At least one (1) key person that is a permanent employee of the firm is required for the geotechnical engineer. For each key person, submit one (1) blasting example and one (1) pre-splitting example. Submit examples of DOT or similar work sealed by the key person and completed within the last three (3) years.

PRECONSTRUCTION Unit contact: Chris Chen (919) 707-6876

GEOTECHNICAL SPECIALTY SERVICES

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Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
364	MSE Segmental Wall Design	MSE Retaining Walls with Segmental Retaining Wall (SRW) Units	Geotechnical Engineer	P.E.	5	P.E.	At least one (1) key person that is a permanent employee of the firm is required for the geotechnical engineer. For each key person, submit two (2) examples of DOT or similar work that are in accordance with the *AASHTO LRFD Bridge Design Specifications* and analyzed with the computer program, MSEW. Submit examples sealed by the key person and completed within the last three (3) years.
536	Hydraulic Conductivity Investigation	Infiltration Basins	Soil Scientist, Project Geologist or Geotechnical Engineer	L.S.S., L.G. or P.E.	3	L.S.S., L.G. or P.E.	At least one (1) key person that is a permanent employee of the firm is required for the soil scientist, geologist or engineer. For each key person, submit two (2) examples of hydraulic conductivity investigations for infiltration basins in the state of North Carolina sealed by the key person and completed within the last three (3) years. Experience with identifying soil horizons and seasonal high water table and determining hydraulic conductivity with in-situ borehole test methods using a constant head permeameter is required.

CONSTRUCTION SERVICES Unit contact: ` Mickey Biedell (919) 707-4803

CONSTRUCTION SERVICES mbiedell@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
195	Roadway Construction Engineering & Inspection		Construction Manager	P.E.			Construction Manager must show sufficient experience overseeing these type projects with the last five (5) years.
233	Structures Construction Engineering & Inspection		Construction Manager	P.E.			Construction Manager must show sufficient experience overseeing these type projects with the last five (5) years.
125	Intelligent Transportation System (ITS) Inspection		Construction Manager	P.E.			Construction Manager must show sufficient experience overseeing these type projects with the last five (5) years.
289	Signal Systems Inspection		Construction Manager	P.E.			Construction Manager must show sufficient experience overseeing these type projects with the last five (5) years.
42	Construction Contract Claims Analysis		Construction Manager				Construction Manager must show sufficient experience overseeing these type projects with the last five (5) years.
47	Critical Path Method (CPM) Scheduling		Construction Manager				Construction Manager must show sufficient experience overseeing these type projects with the last five (5) years.

TRANSPORTATION MOBILITY & SAFETY DIVISION

Unit contact: **Dominic Ciaramitaro** **(919) 814-5102**

ITS & SIGNALS

djciaramitaro@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
207	Signal Design	Local intersection signal design.	Signal Design Engineer	P.E.	2	P.E.	Key personnel should be employees with at least two (2) years of hands-on experience with a significant number of signal plans. Personnel that have only managed projects involving traffic signals will not qualify without sufficient signal design experience. Examples of Key Personnel's work will only be requested if their resume does not show evidence of sufficient signal design experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If key personnel have been previously prequalified in this discipline, no examples are required.
209	Signal System Communications Design	Developing communication plans (fiber, radio, Ethernet, etc.) and performing surveys of aerial utilities and making recommendations for adjustments based on the NESC.	Signal System Communications Design Engineer	P.E.	2	P.E.	SIGNAL SYSTEMS COMMUNICATIONS DESIGN (communication networks for closed loop signal systems): Key personnel should be employees with at least two (2) years of plan designing experience using fiber optic communications, radio communications and other types of communication schemes (Ethernet, wireless modems, etc.) Personnel that have only managed projects involving traffic signals will not qualify without sufficient signal design experience. Examples of Key Personnel's work will only be requested if their resume does not show evidence of sufficient communications design experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If key personnel have been previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit.
			Signal System Communications Design Engineer		2		UTILITY MAKE-READY PLANS: Key personnel should be employees with at least two (2) years of experience reviewing utility attachments on joint-use pole lines and be able to identify violations with regards to the rules and regulations associated with the National Electrical Safety Code. Additionally, these individuals will make recommendations for adjustments when violations are identified and ensure no violations will occur once our new communications media is installed on the joint-

							use pole. Personnel that have only managed projects involving traffic signals will not qualify without sufficient signal design experience. Examples of Key Personnel's work will only be requested if their resume does not show evidence of sufficient Utility Make Ready Design experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If key personnel have been previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit.
210	Signal System Timing	Developing signal system coordination timing plans and field implementation/fine tuning of the signal system coordination timing plans.	Signal System Timing Engineer	P.E.		P.E.	For stand-alone signal systems separate from centralized metropolitan signal system timing plan development/implementation. Key personnel should be employees with at least two (2) years of signal system coordination timing plan development and field implementation experience. Emphasis on the ability/experience to develop signal system timing plans, with additional emphasis on having the experience and expertise to field implement and fine tune the signal system timing plans. Personnel that have only managed projects involving signal system timing or only have experience using SYNCHRO, SimTraffic, HCM, and other traffic and/or transportation related software to develop, analyze, optimize, model, and/or evaluate signal system timing plans will not qualify without sufficient signal system timing field implementation/fine tuning experience. Examples of Key Personnel's work will only be requested if their resume does not show evidence of sufficient signal system timing plan development and field implementation experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If key personnel have been previously prequalified in this discipline, no examples are required.
208	Signal Equipment Design	Local intersection signal equipment design.	Project Engineer	P.E.	2	P.E.	Must have at least one (1) key person per role. Key personnel should be employees with at least two (2) years of hands-on signal equipment design experience, preferably using 2070 controllers. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: copies of sealed electrical design plans showing configuration for the controller, cabinet and other equipment.

123	Intelligent Transportation System Design	Develop plans, functional specifications, and estimates for intelligent transportation systems. These systems may include: detailed communications infrastructure (including utility make-ready engineering), computerized signal systems, closed circuit television cameras, dynamic message signs, incident detection, roadway weather information systems, automated weigh stations, low visibility detection, reversible lanes, and software interface requirements.	ITS Design Engineer	P.E.	2	P.E.	Key personnel should be employees with at least two (2) years of hands-on ITS design experience with a significant number of ITS plans. Personnel that have only managed projects involving ITS will not qualify without sufficient ITS design experience. Examples of key personnel will only be request if their resume does not show evidence of sufficient signal design experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If key personnel have been previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit.

TRANSPORTATION MOBILITY & SAFETY DIVISION

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SIGNING & DELINEATIONS

- *Signing and Delineation prequalifications are by individuals*

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
97	Guide Sign Design – Conventional Roads	Conventional road signing plan design.	Project Engineer	P.E.		P.E.	Must have at least one (1) key person per role. Experience using "Guide Sign" design software for permanent or work zone use. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.
98	Guide Sign Design – Expressways and Freeways	Expressway and Freeway sign plan design.	Project Engineer	P.E.		P.E.	Must have at least one (1) key person per role. Experience using "Guide Sign" design software for permanent or work zone use. Experience in support design (ground and overhead mounted) and know criteria for barrier guardrail or other protective devices. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.

155	Pavement Markings Plans	Pavement markings, bicycle and pedestrian plans.	Project Engineer	P.E.		P.E.	Must have at least one (1) key person per role. Provide delineation plans that include pedestrians accounted for with curb ramp and crosswalks. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.

TRANSPORTATION MOBILITY & SAFETY DIVISION

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CONGESTION MANAGEMENT

- *Congestion Management prequalifications are by individuals*

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
252	Traffic Impact Studies	Preparation of Traffic Impact Analysis/Study (TIA/TIS) for NCDOT review, primarily for a private developer and municipal projects seeking access to the State Highway System.	Project Engineer	P.E.			Must have at least one (1) key person per role. Must show adherence to all Department policies and guidelines, including the *Policy on Street and Driveways*, *Driveways Access to North Carolina Highways* and the *NCDOT Congestion Management Capacity Analysis Guidelines*. Prequalification in this discipline is not required for a firm/engineer to submit a TIA for NCDOT review, as the Department cannot dictate which engineer can be hired by a private entity. Prequalification in this discipline indicates that the engineer in question has demonstrated adherence to all relevant policies and practices, and as such simplified the Department's review and evaluation of the requested access. The primary purpose of this discipline is to indicate the likely review time of the submitted report by the Congestion Management Section. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.

27	Capacity Analysis – Freeways and Interchanges	Traffic analysis of uninterrupted flow operation. This may include freeway merge, diverge and weaving segments, mainline operation and design and review of interchange concepts.	Project Engineer	P.E.			Must have at least one (1) key person per role. Analysis methodology should follow *Highway Capacity Manual* (2010) procedures, primarily found in Volume 2, Uninterrupted flow. This analysis is macroscopic. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.
26	Capacity Analysis – Intersections and Corridors	Traffic analysis of interrupted flow operation. This may include signalized and unsignalized intersection analysis and corridor operation.	Project Engineer	P.E.			Must have at least one (1) key person per role. Analysis methodology should follow *Highway Capacity Manual* (2010) procedures, primarily found in Volume 3, Interrupted flow. This analysis is macroscopic, although simpler microscopic procedures may be used. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.
30	Capacity Analysis – Roundabouts	Traffic analysis of roundabout intersections. This includes capacity analysis of roundabout operations using specialized software (as listed in the Congestion Management Traffic Analysis Guidelines).	Project Engineer	P.E.			Must have at least one (1) key person per role. Analysis methodology should follow *Highway Capacity Manual* (2010) procedures, primarily found in Volume 3, Interrupted flow. This analysis is separate from the general intersection category because of the specialized nature of roundabout design and operation. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.

256	Traffic Simulations Using Advanced Modeling Software	Traffic simulations of complex networks. This includes proficiency with advanced simulation modeling software to analyze more complicated road networks. This work may be required for the completion of documents involving freeway interchanges and alternative intersection design that cannot be reasonable completed by macroscopic analysis software.	Project Engineer	P.E.			Must have at least one (1) key person per role. Software packages used for this discipline include, but not limited to, TSIS-CORSIM, VISSIM, Paramics and TransModeler. Because of its limitations for use for uninterrupted flow, the Synchro/SimTraffic software package is not included for qualification in this discipline. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.
127	Interchange Modification/Justification Reports	Interchange Modification or Justification Reports (IMR/IJR). This includes all steps in preparation of IMR/IJR for submittal to FHWA. Steps include advanced traffic simulations, freeway and interchange analysis and providing detailed information for FHWA IMR/IJR process steps.	Project Engineer	P.E.			Must have at least one (1) key person per role. Prequalification for both Category Analysis – Freeways and Interchanges and Traffic Simulations Using Advanced Modeling Software is required to become approved in this discipline. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.

205	School Traffic Operations Studies	Traffic Analysis of on-campus and directly affected intersections regarding school transportation operations (pedestrian, bicycle, parent and staff automobile, and buses). This work may be required for completion of documents involving school student loading operations (parent vehicle and buses), parent traffic needs (queuing and parking) and pedestrian/bicycle interaction.	Project Engineer	P.E.			Must have at least one (1) key person per role. Must show knowledge and proficiency with advanced simulation modeling software to analyze school transportation. Modeling should include identifying the student loading zone and simulation of the on-campus traffic pattern (both entering and exiting the campus) and creating multiple student loading cycles. Analysis should include actual data and/or calculations provided by the MSTA School Traffic Calculator. Some preliminary design detail work/knowledge may be included. In addition to school transportation operations analysis will encompass work included in Capacity Analysis – Intersections and Corridors and Traffic Impact Studies. If previously prequalified in this discipline, recent examples are required. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.

TRANSPORTATION MOBILITY & SAFETY DIVISION

TRAFFIC MANAGEMENT – WORKZONE TRAFFIC CONTROL

Unit contact: Dominic Ciaramitaro (919) 814-5102

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Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
247	Traffic Management Plans	Temporary Traffic Control Plan, Transportation Operations Plan and Public Information Plan	Project Engineer	P.E.			Must have at least one (1) key person per role. Must submit two (2) sealed and dated samples of Traffic Management Plans prepared within the last five (5) years by a current employee of the firm. Must submit examples of DOT or similar work completed within the last five (5) years and sealed by each engineer; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit. Examples should include: project lists and descriptions including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this will also be considered for prequalification.

TRANSPORTATION MOBILITY & SAFETY DIVISION

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TRAFFIC SAFETY

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
309	Traffic Data Collection	The collection and/or processing of traffic data in various increments and durations including turning movement (may include classification), volume/speed/class, spot speed (lidar required), delay, gap, saturation flow rate, travel time, manual classification, pedestrian corridor crossing, compliance, volume/class (non-motorists), occupancy data, origin/destination, video, and other traffic-related data as needed. Classification data may be in the NCDOT four class scheme (based on the FHWA 13-class scheme) or be in groups based on AASHTO design vehicles. Must be familiar with PETRAPro, PC-Warrants, the NCDOT Axle Based Classification Tree, NCDOT Guidelines for Classification by Length, Federal Railroad Administration (FRA) land use categories, and the FHWA Traffic Monitoring Guide (TMG), and National Weather Service (NWS) weather data.	Project Manager		5		Key personnel shall have a minimum of five (5) years of experience in managing traffic data collection and/or traffic data processing. Work examples (electronic copies only) and references may be requested and reviewed depending on past experience shown on Key Personnel's resume. Past experience with the Department for similar work by the vendor may also be considered.

458	Crash Analysis	Perform Location Specific Crash Analysis using TEAAS and provide crash data support functions including, but not limited to, updates and revisions to the Strategic Highway Safety Plan (SHSP), crash reduction factors (CRFs), safety performance functions (SPFs), crash rates, and crash costs.	Project Engineer			P.E.	Key personnel must have experience using the NCDOT Traffic Engineering Accident Analysis System (TEAAS). Must be able to demonstrate knowledge of crash location referencing and mileposting procedures used by the NCDOT Traffic Safety Unit. The individual should be able to provide documentation of attending a TEAAS Training course, if requested. The individual seeking prequalification may be requested to submit examples of work, including all documentation, completed within the last five (5) years; or may need to successfully pass prequalification testing.
459	Traffic Engineering and Transportation Safety Investigations, Research, Recommendations and Studies	Perform traffic engineering and transportation safety investigations, research and provide recommendations.	Project Engineer Must have at least one key person per role.	P.E.	2	P.E.	Must have at least one (1) key person per role. Person must be capable of providing full range of traffic engineering, traffic operations (including traffic control devices), traffic safety and regulatory investigations, research and recommendations when it comes to reviewing roadway, traffic control, traffic signal, signing, pavement marking plans, etc. Must have experience and a demonstrated knowledge in design reviews and must be capable of identifying project deficiencies and justified traffic safety measures that will improve safety and operational performance. Applied traffic operational, safety and road geometric knowledge and regional familiarity / knowledge are required. Familiarity with MUTCD, AASHTO, TEEPL and North Carolina Transportation laws and regulations are required. The individual seeking prequalification must submit examples of work, including all documentation completed within the last five (5) years; electronic submittals only (preferably North Carolina based work). Examples include: traffic engineering, and traffic safety investigation & analysis experience and must be able to use evidence driven data to justify traffic engineering and traffic safety recommendations. Project / plan review letters and correspondence dealing with safety measures for TIP type reviews on projects. If the work was performed for, or submitted to, the Transportation Mobility and Safety Division – Traffic Safety Unit, only a reference to the work is necessary. If previously prequalified in this discipline, no examples are required unless requested by the reviewing Unit.

496	Traffic Safety and Mobility Statutory Support	The interpretation and application of statutory, rule, and ordinance requirements in traffic safety and mobility policies and practices. Development of recommendations for changes to statutes, rules, and ordinances. Development, implementation, and/or approval of ordinances. Management of ordinance processes and distribution. Updating and maintaining formal procedures and guidelines related to statutory, rule, and ordinance requirements to include, but not limited to, speed limits, truck routes and restrictions, route changes, and self-propelled farm equipment on fully controlled access facilities.	Project Manager		2		Key personnel shall have a minimum of two (2) years of experience in managing data related to statutes, rules (administrative code), ordinances or other similar legal aspects related to traffic safety and traffic mobility. Work examples (electronic copies only) and references may be requested and reviewed depending on past experience shown on Key Personnel's resume. Past experience with the Department for similar work by the vendor may also be considered.
497	Traffic Safety Data Support	Support functions for traffic safety data systems and the Highway Safety Improvement Program (HSIP) and other safety and mobility planning and evaluation programs and initiatives. Work may include mapping, reports, shape files, crash corrections and other data entry functions, mileposting, web content, and other crash-related and mobility-related documentation and publications.	Project Manager		2		Key personnel shall have a minimum of two (2) years of experience in working with and displaying transportation-related data. Work examples (electronic copies only) and references may be requested and reviewed depending on past experience shown on Key Personnel's resume. Past experience with the Department for similar work by the vendor may also be considered. Firm must be prequalified for discipline 458 ("Crash Analysis") prior to being prequalified for this discipline.

TRANSPORTATION MOBILITY & SAFETY DIVISION

Unit contact: **Dominic Ciaramitaro** **(919) 814-5102**

TRAFFIC SYSTEM OPERATIONS

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Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
462	Traffic Operations	Scoping, developing, and operating traffic operations programs and services.	Traffic Operations Experts				Key employees must: —Display national experience/Exposure/Knowledge of TO Performance Measures —Display experience with Writing Proposals for, Designing, Implementing, Testing, and Managing Automated Transportations Management Systems (ATMS) —Have 2 years of experience Operating Transportation Management Centers (TMC) —Display experience with development and implementation of TMC Operator Training Programs —Display experience with development and implementation of TMC Operator Certification Programs —Show experience with TMC Performance Reporting including examples —Show experience with scoping and developing TMC Implementation Plans —Have 2 years of experience: • providing TMC Media Coordination • providing TMC Law Enforcement Coordination • with Customer Service Operations • with Emergency Operations Show experience of developing and implementing Response Plans —Show experience with and/or knowledge of: • Advance Traffic Management (ATM) • Travel Demand Management (TDM) • Ramp Meter Operations • Variable Speed Limit Operations • Traffic Analysis related to TO Examples of Key Personnel's work will only be requested if their resume does not show evidence of sufficient traffic operations experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary.

463	Incident Management	Scoping, developing, and operating incident management related programs and services.	Incident Management Experts				— Display national experience/Exposure/Knowledge of TIM Performance Measures — 2 year of experience with: • Incident Command Systems (ICS) • providing Service Patrol Operations • Display national experience/exposure/knowledge of Incident Scene Traffic Control — Show experience with and/or knowledge of: • Service Patrol Training Programs • TIM Certification Programs • Developing and implementing TIM Standard Operating Procedures/Guidelines • Facilitating TIM Team Meetings • Scoping, developing and implementing Heavy Towing Programs Examples of Key Personnel's work will only be requested if their resume does not show evidence of sufficient traffic operations experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary.
464	ITS Operations	Scoping, developing, and operating ITS Operations related programs and services.	ITS Operations Experts				— Show experience with scoping and developing Intelligent Transportation Systems (ITS) Device Maintenance Programs — 2 years of experience with: • TMC Configuration Management • Systems Engineering • Systems Management Examples of Key Personnel's work will only be requested if their resume does not show evidence of sufficient traffic operations experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary.
465	Traveler Information	Scoping, developing, and operating traveler information related programs and services.					— 5 years of experience: • scoping, developing and implementing 511 Systems • operating a 511 System — Show experience with providing quality Voice Recognition Programs Examples of Key Personnel's work will only be requested if their resume does not show evidence of sufficient traffic operations experience; electronic submittals only. If the work was performed for or submitted to the Transportation Mobility and Safety Division, only a reference to the work is necessary.

495	Traffic Operations and Incident Management						Please contact Mr. Cliff Braam at (919) 825-2616 or Ms. Meredith McDiarmid at (919) 825-2619 for more information on the scope of work and requirements for this discipline.

PROJECT DEVELOPMENT

Unit contact: **James Tortorella (919) 707-6047**

PROJECT PLANNING FOR HIGHWAY PROJECTS

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Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
32	Categorical Exclusions	NEPA and NCEPA analysis and regulatory compliance.	NEPA/NCEPA Practitioner	PE or AICP preferred	3	P.E.	NEPA/NCEPA experience must have required consideration of environmental regulations such as Section 404, Section 4(f), Section 6(f), Section 106 and community issues such as EJ and underserved populations.
63	Environmental Assessment/Finding of No Significant Impacts	NEPA and NCEPA analysis and regulatory compliance.	NEPA/NCEPA Practitioner	PE or AICP preferred	5	P.E.	NEPA/NCEPA experience must have required consideration of environmental regulations such as Section 404, Section 4(f), Section 6(f), Section 106 and community issues such as EJ and underserved populations.
66	Environmental Impact Statement/Record of Decision	NEPA and NCEPA analysis and regulatory compliance.	NEPA/NCEPA Practitioner	PE or AICP preferred	7	P.E.	NEPA/NCEPA experience must have required consideration of environmental regulations such as Section 404, Section 4(f), Section 6(f), Section 106 and community issues such as EJ and underserved populations.

ENVIRONMENTAL ANALYSIS **Unit contact:** **Randy Griffin (919) 707-6121**

HUMAN ENVIRONMENT SECTION (HES) **rgriffin@ncdot.gov**

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
5	Project-Level Air Quality Analysis						Previous experience in project-level analyses; Analyst must have received formal classroom training in USEPA MOVES modeling software; Resume (2 pgs. or less), all applicable training certificates and a complete list of air quality analyses performed within past 5 years (including client) must be submitted for review
14	Archaeological Resource Surveys	Archaeology	Archaeologist				Key project personnel will meet the qualifications for professional archaeologists as listed in the Secretary of the Interior's Professional Qualification Standards (48 FR 22716). Staff must have experience conducting archaeological investigations in the Southeastern United States. Examples of work and staff resumes must be submitted for review.
36	Community Impact Assessment	Community Impact Assessment (CIA) is an iterative process to evaluate the direct effects of a transportation action on a community and its quality of life. The assessment process is an integral part of project planning and development that shapes the outcome of a project by raising awareness and understanding of both positive and negative effects of proposed actions on the human (social and economic) environment. Its information is used to guide the project and provide documentation of the current and	Community Planner (CP) or equivalent NEPA Practitioner (NP)				Community Planner/NEPA Practitioner should have prior CIA experience. Without direct experience the practitioner must demonstrate experience in socio-economic impact analysis, multi-modal transportation planning and land use planning, with training in or a demonstrated understanding of NEPA and demographic analysis. Practitioners without direct experience must also have appropriate education: • Masters in planning or an allied profession and a year of applicable community planning experience, • Bachelors in planning or an allied profession and three years of applicable community planning experience, or

		anticipated social environment of a geographic area with and without the action. CIA uses data analysis as well as broad community interaction to enable informed transportation decision-making in compliance with 23 U.S.C. 109(h). The assessment should include all items of importance to people, such as mobility, safety, employment effects, relocation, isolation, and other community issues. CIA also incorporates federal laws and mandates such as Environmental Justice, Limited English Proficiency and the Farmland Protection Policy Act when applicable.					• Other degree plus seven years of applicable community planning experience
106	Historic Architectural Surveys of Standing Structures (Buildings and Bridges)	Standing Structure Surveys					Key project personnel will meet the qualifications for professional architectural historians as listed in the Secretary of the Interior's Professional Qualification Standards (48 FR 22716). Staff must have experience conducting historic architectural investigations in the Southeastern United States. Examples of work and staff resumes must be submitted for review.

116	Indirect and Cumulative Effects Assessment	The purpose of an ICE report is to inform the decision-making process regarding which alternatives to carry forward by assessing the potential indirect and cumulative effects based on potential change in land use as a result of the project. The ICE incorporates a matrix tool that considers factors known to influence land use, including the scope of the project, travel time savings, population growth, employment growth, land available for development, water and sewer availability, market for development, development regulations, and the presence of notable environmental features. ICE findings indicate whether further analysis in the form of a Land Use Scenario Assessment (LUSA) is warranted. A LUSA also informs the decision-making process regarding selection of the Recommended Alternative by assessing development potential in identified Probable Development Areas. The Natural Environment Section uses LUSA findings to determine whether ICI water quality modeling is needed for permitting.	Community Planner (CP) or equivalent NEPA Practitioner (NP)				Community Planner/NEPA Practitioner should have prior ICE experience. Without direct experience the practitioner must demonstrate experience in socio-economic growth projection, land use planning and land development, with training in or a demonstrated understanding of NEPA and demographic analysis. Practitioners without direct experience must also have appropriate education: • Masters in planning or an allied profession and a year of applicable community planning experience, • Bachelors in planning or an allied profession and three years of applicable community planning experience, or • Other degree plus seven years of applicable community planning experience
171	Public Involvement						Submit an organizational chart showing key staff with SHORT resumes who are responsible for public involvement. Consultants should also include in their submittal a list of other disciplines with NCDOT with which they are prequalified. Must submit two (2) examples of work. Consultants should demonstrate in their submittal an understanding of how the community impact assessment, public involvement, LEP, Environmental Justice, NEPA and the Clean Water Act work in concert as part of the project development process.

253	Preliminary Traffic Noise Analysis (TNA) for NEPA Documents						An Analyst and a Reviewer are required; Analyst must have formal classroom training in FHWA Traffic Noise Model (TNM®); Reviewer must have either formal classroom training in FHWA Traffic Noise Model (TNM®) OR must have successfully completed the NHI Highway Traffic Noise Course (# 142051); Resume (2 pgs or less), all applicable training certificates and a complete list of noise analyses performed/reviewed within past 5 years (including client) must be submitted for review
308	Limited English Proficiency (LEP)						Submit an organizational chart showing key staff with SHORT resumes who are responsible for Limited English Proficiency. Consultants should also include in their submittal a list of other disciplines with NCDOT with which they are prequalified. Must submit two (2) examples of Limited English Proficiency work. Consultants should demonstrate in their submittal an understanding of how the community impact assessment, public involvement, LEP, Environmental Justice, NEPA and the Clean Water Act work in concert as part of the project development process.
439	Quantitative Mobile Source Air Toxics (MSAT) Analysis						An Analyst and a Reviewer are required; Analyst must meet the requirements for Project-Level Air Quality Analysis AND must have received formal classroom training in Quantitative MSAT modeling using USEPA MOVES software; Reviewer must provide evidence of having personally completed review of a Quantitative MSAT analysis modeled with MOVES software; Resume (2 pgs or less), all applicable training certificates and a complete list of all Quantitative MSAT analyses performed/reviewed within past 5 years (including client) must be submitted for review.
440	Quantitative Particulate Matter (PM) Analysis						An Analyst and a Reviewer are required to be prequalified for this discipline; Analyst must meet the requirements for Project-Level Air Quality Analysis AND must have received formal classroom training in Quantitative PM modeling using USEPA MOVES software; Reviewer must provide evidence of having personally completed review of a Quantitative PM analysis modeled with MOVES software; Resume (2 pgs or less), all applicable training certificates and a complete list of all Quantitative PM analyses performed/reviewed within past 5 years (including client) must be submitted for review.

441	Design Noise Report						An Analyst and a Reviewer are required; Analyst must meet the requirements for Preliminary Traffic Noise Analysis (TNA) for NEPA Documents AND provide evidence of having personally completed a traffic noise analysis that includes final design of noise abatement measures utilizing the most current version of the FHWA Traffic Noise Model (TNM®) and CADD software; Reviewer must meet Reviewer requirements for Preliminary Traffic Noise Analysis (TNA) for NEPA Documents and provide evidence of having personally completed review of a traffic noise analysis that includes final design of noise abatement measures; Both Analyst and Reviewer must be prequalified specifically for Design Noise Reports by NCDOT; Resume (2 pgs. or less), all applicable training certificates and a complete list of noise analyses performed/reviewed within past 5 years (including client) must be submitted for review.

ENVIRONMENTAL ANALYSIS

NATURAL ENVIRONMENT SECTION (NES)

Unit contact: Randy Griffin (919) 707-6121

rgriffin@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
59	Ecological & Biotic Community Studies	Description and Mapping of plant and animal communities throughout NC.	Biologist/ Ecologist		3		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field.
76	Freshwater Mussel Surveys	Detailed surveys for Protected freshwater mussels throughout NC. Includes snorkel and SCUBA surveys.	Biologist/ Ecologist		3		Appropriate Federal and State Licenses must be submitted with package.
114	ICI Water Quality Assessments	Water Quality modeling associated with community planning Indirect and Cumulative Effects Analysis	Biologist/ Ecologist, Project Manager, Engineer	P.E.	3		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field with Water Quality models, for example: GWLF.
243	Threatened and Endangered Species Survey & Studies	Conduct surveys and formulate a Biological Conclusion for Federally Protected plant and animal species in NC	Biologist/ Ecologist		3		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field. Appropriate licenses for animal collection must be submitted with package if applicable
280	Wetland and Stream Delineation	Jurisdictional delineation of wetlands and streams. Includes familiarity with USACE and DWQ forms and worksheets including Rapanos.	Biologist/ Ecologist, Soil Scientist		3		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field, Wetland Delineation Stream Identification, and NCWAM training certificates. PWS preferred.

ENVIRONMENTAL ANALYSIS

ON-SITE SERVICES (NES)

Unit contact: **Randy Griffin (919) 707-6121**

rgriffin@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
227	Stream Biological Monitoring	Benthic Macroinvertebrate collection.	Biologist/ Ecologist		3		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field. NC DWQ Aquatic Insect Collection certification preferred.
228	Stream Mitigation Site Design and Construction Assistance & Post-Construction Monitoring		Biologist/ Ecologist, Soil Scientist, Engineer	P.E.	5		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field. NC DWQ Aquatic Insect Collection certification preferred. Minimum of at least 2 stream mitigation restoration and/or relocation projects (minimum of 1000 LF each) that included channel reconstruction or relocation based upon natural geomorphic designs incorporating in-stream structures (i.e., rock cross vanes, rock vanes, j-hook vanes, rootwads, etc.) Include name of project, linear feet of stream, completion date, owner of the project, a description of the work involved with the project, as well as the post-construction monitoring results and mitigation credit release. Projects must be planned and designed to meet compensatory mitigation requirements of USACE, NCDWQ, and/or NCDCM. Provide additional information as appropriate on up to 5 additional stream projects that have been completed, including project name, linear feet of stream, completion date, owner of the project and a description of the work involved with the project. Please provide any additional training/experience relating to Stream Restoration and Construction.
229	Stream Mitigation Site Plan	Feasibility and preliminary planning.	Biologist/ Ecologist, Soil Scientist, Engineer	P.E.	3		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field.

287	Wetland, Stream and Buffer Permitting	Development of Complete Application, including discussion of all relevant State and Federal issues that affect the permit decision (not just drawings).	Biologist/ Ecologist, Project Manager	P.E.	3		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field. NEPA, CWA, Riparian Buffer Rules, CAMA training required. NCDOT Plan Reading training preferred.
285	Wetland Mitigation Site Planning	Feasibility and preliminary planning.	Biologist/ Ecologist, Soil Scientist, Engineer	P.E.	3		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field.
284	Wetland Mitigation Site Design and Construction Assistance & Post-Construction Monitoring		Biologist/ Ecologist, Soil Scientist, Engineer	P.E.	5		Key personnel must have a B.S. in Biology, Ecology or other Natural Resource Management Field. Minimum of at least 2 wetland mitigation restoration projects (minimum of 10 acres each) that included restoration (site grading and planting) of a prior impacted wetland system for compensatory wetland mitigation credits. Include name of project, size, completion date, owner of the project, a description of the work involved with the project, as well as the post-construction monitoring results and mitigation credit release. Projects must be planned, and designed to meet compensatory mitigation requirements of USACE, NCDWQ, and/or NCDCM. Provide additional information as appropriate on up to 5 additional wetland mitigation projects that have been completed, including project name, size, completion date, owner of the project and a description of the work involved with the project. Please provide any additional training/experience that the company has relating to Wetland Restoration and Construction.

GIS Unit contact: Jun Wu (919) 707-2155

GIS jwu@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
31	Cartography	Expressing graphically, usually through maps, the natural and social features of the earth.					Must demonstrate knowledge and experience with digital and/or hard copy map design, map projections, cartographic standards, map book generation and output/presentation methods.
94	Field Date Collection	Plan, manage and execute the spatial acquisition of natural and social features.					Must demonstrate knowledge and experience with spatial data collection including the use of hardware (GPS receivers, hand held computers, pen-based computers, digital cameras, laser instruments) and data collection/mapping software.
87	Data Conversion	Perform data translation from one spatial format (this includes hard and soft copy sources) to another.					Must demonstrate knowledge and experience with different geographic data formats, database formats, geographic/database conversion software, geographic/database conversion coding and spatial data transfer standards (SDTS).
88	Data Validation (QA/QC)	Verify the quality of a spatial product during and/or after its production. This includes the following key elements: Completeness; Validity; Logical Consistency; Physical Consistency; Referential Integrity; Positional Accuracy.					Must demonstrate knowledge and experience with QA/QC processes/methods and data validation procedures.

189	Remote Sensing Data	Collection and interpreting information about the environment and the surface of the earth from a distance, primarily by sensing radiation that is naturally emitted or reflected by the earth's surface or from the atmosphere, or by sensing signals transmitted froma device and reflected back to it. Examples include aerial photography, radar and satellite imaging.					Must demonstrate knowledge and experience with remote sensing images acquired from aircraft, satellites or ground bases, or platforms using visual or computer assisted technology.

MATERIALS AND TESTS

Unit contact: Linda Jones (919) 329-4003

LABORATORY SERVICES

lfjones@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
241	Thermoplastic	Provide Laboratory testing services in the area of thermoplastics			3		Key Personnel must be certified to perform the following: AASHTO M249 and T250; ASTM, C256, D36, D92, D153, D792, D2240, D4960, D4796, D4797, D 3720 or D4764, and E1349.
134	Lead-in / Loop Cable	Provide Laboratory testing services in the area of polyethylene plastic extrusion materials for wire and cable			3		Key Personnel must be certified to perform the following: ASTM D-1248, and D-1603.
16	Asphalt Materials - Binder & Emulsified	Provide Laboratory testing services in the area of asphalt binder and emulsion.			3		Key Personnel must be certified to perform the following: AASHTO T-59 for Emulsion Testing and/or AASHTO R-28, T-44, T-48, T-49, T-51, T-53, T-228, T-301, T-55, T-240, T-313, T-314, T-315 and T-316 for binder. Must also provide reference to current accreditation through AMRL or approved equivalent for all test procedures being performed.
518	Paint Testing						Key Personnel must be certified to perform the following: ASTM D2369, D2371, D1475, D2698, D3723
108	Hot Bitumen Adhesive	Provide Laboratory testing services in the area of hot bitumen adhesive					Key Personnel must be certified to perform the following: ASTM D36, D5, D5329, D2669, D2171, D4402, and D92.
91	Glass Beads	Provide Laboratory testing services in the area of glass beads for pavement markers			3		Key Personnel must be certified to perform the following: EPA Test Method 6010B and Method 3052, ASTM D1214 and D1155.
3	Aggregate	Provide Laboratory testing services in the area of aggregates					Key Personnel must be proficient in conducting the following tests: AASHTO T11, T27, R-58 (NCMod), T88 (NCMod), T89 (NCMod), T90 (NCMod) and T265. Firm's testing facility and equipment will also need to be assessed.
442	Hot Applied Joint Sealer	Provide Laboratory testing services in the area of hot applied joint sealers			3		Key Personnel must be certified to perform ASTM D6690.

MATERIALS AND TESTS

Unit contact: Linda Jones (919) 329-4003

LABORATORY SERVICES

lfjones@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
519	Level I Testing of Asphalt Mix	Provide certified Level I technician for testing of asphalt in Department laboratories.					Key Personnel must have a QMS Level I Plant Certification. Technician must be able to show proficiency in QMS asphalt testing.
520	Basic Testing of Asphalt Mix	Provide entry level technician for testing of asphalt in Department laboratories.					Key Personnel must be capable of being trained on testing of asphalt and be able to work under the direct supervision of certified technicians.
521	General Laboratory Technician	Provide entry level position capable of being embedded into one of the Materials and Tests Laboratories.	Engineering Technician-Contributing		0		Technician used in such areas as receiving samples and basic laboratory services not requiring a certification.
522	Laboratory Technician	Higher level position capable of being embedded into one of the Materials and Tests Laboratories.	Engineering Technician-Journey		5		Technician with various laboratory certifications related to the material being tested.
291	GeoMaterials Laboratory Certification (Tier I)						Laboratory and Technician certification for the following AASHTO/NCMod tests: T-11, T-27, R-58 (NCMod), T-88 (NCMod), T-89 (NCMod), T-90 (NCMod), T-265 and M-145. Optional Tests: T-267 and T-289. Firm must be certified by AASHTO Resource (Formerly AMRL) Accreditation Program. Firm's testing facility and equipment will also need to be assessed.
292	GeoMaterials Laboratory Certification (Tier II)						GeoMaterials Laboratory Certification (Tier I), plus AASHTO T-99, T-100, T-134, T-193 and ASTM D-1633.
293	GeoMaterials Laboratory Certification (Tier III)						GeoMaterials Laboratory Certification (Tier I) and (Tier II), plus T-216, T-296 and T-297. Optional Tests: T-208 and T-215.
523	GeoMaterials Laboratory Certification (Tier IV)						Laboratory and Technician certification for the following ASTM tests: C-39, C-617, and C-1231. Firm must be certified by CCRL Accreditation Program. Firm's testing facility and equipment will also need to be assessed.

Revised as of 3/30/18

MATERIALS AND TESTS — Unit contact: Linda Jones (919) 329-4003

INSPECTION SERVICES — lfjones@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
119	Inspection of Prestressed Concrete	Provides hands on inspection services in the area of prestress concrete at the prestress concrete facility.	Engineering Technician-Journey				Key Personnel must be a certified Concrete Technician Level I.
121	Inspection of QMS Asphalt Technician	Audit or Assessment of individual QMS technicians.					Key Personnel must have a QMS Level II Plant Certification.
120	Inspection of QMS Asphalt Laboratory Equipment	Audit or Inspection of specific QMS laboratories.					Key personnel must have a QMS Level II Plant Certification.
524	Inspection of Asphalt Pavement Placement	Inspection of placement operations – including laydown and density testing – of asphalt pavements.					Key Personnel must have a QMS Roadway Certification.
525	Level II Inspection of Asphalt Mixtures and Facilities	Provide certified Level II technician for sampling, testing, and troubleshooting of asphalt at QMS laboratories and plant facilities.					Key Personnel must have a QMS Level II Plant Certification. Technician must be able to show proficiency in QMS asphalt laboratory and plant operations.
526	Asphalt QMS Technician Training	Provide trainer to perform instruction in Asphalt QMS Certification classes.					Key Personnel must have current certifications for QMS Level I Plant, QMS Level II Plant, QMS Roadway, and QMS Mix Design. Technician must have strong communication skills, proficiency in training students, and competence in compiling class materials.
122 / 146	Inspection of Structure Coating						Key Personnel must have the following: NCDOT Bridge Coating Inspector, Level I certification; NACE Level I and six (6) months training with experienced coating inspector.

MATERIALS AND TESTS

INSPECTION SERVICES

Unit contact: Linda Jones (919) 329-4003

lfjones@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
429	Inspection of Timber and Wood Products	Provide inspection services to verify the grade and treatment of timber products					Key personnel must be familiar with AWPA specifications
443	Inspection of Structural Steel & Various Other Metal Products						Key Personnel must have the following: Certified Welding Inspector in accordance with American Welding Society; Certified Radiography Inspector; Certified Mag Particles Inspector; Certified Ultra Sonic Inspector; Certified Dye Penetrate Inspector, NACE Level 1.
527	General Sampling Services	Provide entry level position capable of traveling to facilities to sample various materials. Samples will also need to be entered into the HICAMS database and delivered to the local laboratory.					Technician used in such areas as thermoplastic, glass beads, aggregates, paint, etc. This entry level position requires no initial certifications.
290	Other						

MATERIAL AND TESTS

Unit contact: Matt Hilderbran (919) 835-8204

mrhilderbran@ncdot.gov

PAVEMENT MANAGEMENT

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
152	Pavement Design	Design of concrete and asphalt pavement sections.	Pavement Design Engineer	P.E.	5	P.E.	Must show project experience with AASHTO ’93 Procedure and Pavement ME Design. Must submit two (2) sample designs for concrete and asphalt for each procedure.
149	Pavement Analysis & Backcalculation	Backcalculations of FWD. AASHTO ’93 Procedure and Pavement ME Design.	Pavement Design Engineer	P.E.	5	P.E.	Must show project experience with AASHTO ’93 Procedure and Pavement ME Design. Must submit two (2) sample designs for concrete and asphalt for each procedure.
151	Pavement Deflection & Dynamic Cone Penetration (DCP) Testing	Pavement and soil strength testing and pavement coring.	Project Technician with PE oversight		2		Must have access/ownership to Falling Weight Deflectometer and must provide current calibration reports. Must have access/ownership to a Core Rig for DCP testing.
96	Ground Penetrating Radar and Analysis	Determination of layer thickness.	Project Technician/ Engineer	P.E. or L.G.	5	P.E. or L.G.	Must submit five (5) examples of surveys with analysis and conclusions.
438	Pavement Forensic Investigations	Evaluation of contract documents, construction diaries, materials testing during construction, materials sampling and testing post construction, FWD test interpretation, and development of failure causes and recommended treatments.	Project Engineer	P.E.	5	P.E.	Must submit two (2) reports of contract documents, construction diaries, and materials and test evaluations.

PAVEMENT MANAGEMENT

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
528	SID Inspection	Perform and evaluate drilled shaft inspections for bridges	Engineering Technician-Advanced	NA	2		Must have access/ownership to SID equipment. Must submit two (2) SID Inspection reports.
529	Pipe Inspection	Perform and evaluate inspections on new/old drainage pipes.	Engineer	P.E. and NASSCO Certified	5	P.E.	Must have access/ownership to a CCTV Rover and poll camera for inspection of multiple size and types of pipe. Must submit two (2) video inspection reports (to include all findings).
530	MIT Scans	Perform and evaluation joints in concrete paving.	Engineer	P.E.	5	P.E.	Must have access/ownership to a MIT Scanning device. Must be able to read and analyze the output onsite. Must submit two (2) MIT Scan Reports for review.

531	Friction Testing	Collection of friction levels and skid resistance on pavements.	Pavement Design Engineer	P.E.	5	P.E.	Must show access/ownership to either locked wheel and/or continuous friction tester that can be used at highway speeds. Must also provide current calibration reports/certification.

ASSET MANAGEMENT

Unit contact: **Joshua Vaughan (919) 835-8448**

ASSET MANAGEMENT

jlvaughan2@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
466	Maintenance Condition Assessment Surveys	Collect highway asset data to include asset inventory and condition, and/or roadway characteristics.					Must demonstrate knowledge and experience with the various highway assets and their relevant attributes. Emphasis will placed on inventory, assessment, and evaluation of current condition of these assets.

TRANSPORTATION PLANNING Unit contact: James Upchurch (919) 707-0928

TRANSPORTATION PLANNING Jhupchurch@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
141	Multimodal Transportation Planning						Must show expertise in development of the Transportation Plans which consider various modes of transportation and connections among them, including collection and forecasting of socio-economic data and travel survey data, and public participation for development of a plan.
261	Long Range Transportation Planning						Must show expertise in the development of the Multimodal Long Range Transportation Plans to satisfy Federal regulations. These typically occur in urban areas with greater than 50,000 population.
140	Travel Demand Model Development	Travel Demand model development for small area models (under 50,000) and regional models. Development of a new travel demand model or major/minor update of an existing travel demand model for various sizes of urban area (regional, MPO and non-MPO urban area.)					Must provide a list of travel demand model development projects for which the firm has worked on. Each project must contain: specific staff involved with the project and the role they played in the development; the type and size of the travel demand model (size of study, number of TAZ and major components of model approach); and anything unique or special on these projects. Must provide a list of other areas the firm has specialty (i.e. toll modeling, transit modeling, activity based modeling, etc.). Must list all staff members who will work on travel demand model development projects, including people who provide in-house QA/QC. For each person listed, list travel demand model projects they have worked on and in what capacity. Must have a current TransCAD license.

363	Travel Demand Model Application	Application of existing travel demand models in NC for various purposes, including LRTP Analysis, CTP Analysis, Traffic Forecasting, Air Quality Conformity Analysis and other analyses required by NCDOT: i.e. Transit Ridership Analysis, Sub-area Analysis, Corridor Analysis, Toll Analysis, Travel Demand Management Decisions, Traffic Diversion and Emergency Evacuation Analysis, etc.					Must provide a list of travel demand model application projects for which the firm and current staff have worked on. Each example project must show: specific staff involved with the project and the role they played in the application; the type and size of the travel demand model (size of study, number of TAZ, and other features of the model used); details on how the model was used, what model output was used and for what purpose(s). Must list all staff members who will work on travel demand model application projects, including people who provide in-house QA/QC. For each person listed, list travel demand model projects they have worked on and in what capacity. Must have a current TransCAD license.
6	Air Quality Conformity	Air Quality Conformity analysis is different from the project level noise studies and NEPA air quality studies.			5		Must show expertise and experience performing regional transportation air quality conformity analysis using travel demand model information. Must provide examples of the completed studies, information about the area (urban, MPO, or region), year it was developed and who was the leading expert. Must have a current TransCAD license.
262	Travel Survey				5		Must show expertise and experience performing surveys for travel demand modeling or long range transportation planning, such as household surveys, origin-destination surveys, work place surveys, commercial vehicle surveys, etc. Must demonstrate ability to perform Travel Surveys from beginning to end, including development, distribution, compiling and data analysis. Must provide information about the area of the completed survey (urban area, MPO or region), year it was developed and who was the leading expert.
260	Comprehensive Transportation Planning Development						Must show expertise in development of Multimodal Transportation Plans according to the state CTP requirements.

251	Project Level Traffic Forecasting	Project Level Traffic Forecasting for: (1) areas with a regional model; (2) areas without with a small areas model; and (3) areas without the travel demand model. Specify which type of forecast should be completed. Project Level Traffic Forecasting is different than a traffic impact study or traffic impact analysis. We do not consider these tasks as relevant experience when considering firms qualified for PLTF.					Must have a current TransCAD license. May require to show ability to collect daily, hourly and turning movement counts. Must provide a list of NCDOT TIP projects which the firm has performed with the last 4 years. For each project, list the specific staff involved with the project and the role they played in the development, they type of forecast used (regional model, other model, or did not use travel demand model), and anything special concerning the forecast (complex, urgent turn around, unique, etc.) which show other techniques that may be valuable to bring to the Department. For each person, list the NCDOT TIP projects they have worked on and in what capacity (data collection, analysis, travel demand modeling, figure development, etc.). Must list additional projects firm has completed for other entities.
75	Freight Forecasting						Must show ability to evaluate freight patterns by commodity and mode type between defined units of geography at the county and state level for existing and future road network.
45	Corridor Planning						Must show expertise and experience in corridor planning, coordinating existing and future land use and the multimodal transportation system to provide guidance as development occurs. Must have a current TransCAD license. Must show ability to use TransCAD, Micro Simulation and Public Participation.

ROADSIDE ENVIRONMENTAL UNIT Unit contact: David Harris (919) 707-2925

ROADSIDE ENV – SOIL & WATER

davidharris@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
70	Erosion and Sediment Control Design	All services associates with the design of an approved erosion and sediment control plan that meets current standards outlined in the most recent version of the *NCDENR – Erosion and Sediment Control Planning and Design Manual* for erosion control techniques.	Level III Certified Erosion Control Designer	Required: Level III: Design of Erosion and Sediment Control Plans; CPESC and P.E. are preferred	Designer: 2 Tech: 1		Must submit an organization chart identifying the firms design/monitoring team and their years of experience, applicable registrations, company history involved in this type work, and verify that they are permanent employees of the firm. Must submit at least one (1) key employee who will be responsible for all communication with the Roadside Environmental Unit. For each employee (engineer, biologist or project manager), must submit two (s) examples of NCDOT or similar work that has been approved/reviewed by the Roadside Environmental Unit or other authority. Each sample of work should include: project lists and descriptions, including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this work will be also considered for prequalification.
231	Stream Restoration/Mitigation Monitoring	All services associated with the stream restoration/ mitigation monitoring work.	Engineer or Biologist		5		Must submit an organization chart identifying the firms design/monitoring team and their years of experience, applicable registrations, company history involved in this type work, and verify that they are permanent employees of the firm. Must submit at least one (1) key employee who will be responsible for all communication with the Roadside Environmental Unit. For each employee (engineer, biologist or project manager), must submit two (s) examples of NCDOT or similar work that has been approved/reviewed by the Roadside Environmental Unit or other authority. Each sample of work should include: project lists and descriptions, including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this work will be also considered for prequalification.

283	Wetland Restoration/ Mitigation Monitoring	All services associated with the wetland restoration/ mitigation monitoring work.	Engineer or Biologist		5		Must submit an organization chart identifying the firms design/monitoring team and their years of experience, applicable registrations, company history involved in this type work, and verify that they are permanent employees of the firm. Must submit at least one (1) key employee who will be responsible for all communication with the Roadside Environmental Unit. For each employee (engineer, biologist or project manager), must submit two (s) examples of NCDOT or similar work that has been approved/reviewed by the Roadside Environmental Unit or other authority. Each sample of work should include: project lists and descriptions, including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this work will be also considered for prequalification.
542	Pond/Lake Analysis	All services associated with the analysis of impacts to ponds, lakes, or other aquatic resources associated with sediment deposition.	Engineer, Biologist, or Professional		10		Must submit an organization chart identifying the firm's subject matter expert or team and their years of experience, applicable registrations, company history involved in this type work, and verify that they are permanent employees of the firm. Must submit at least one (1) key employee who will be responsible for all communication with the Roadside Environmental Unit. For each employee (engineer, biologist or project manager), must submit two (s) examples of work that has been approved/reviewed by the NCDOT or other authority. Each sample of work should include: project lists and descriptions, including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this work will be also considered for prequalification.

543	Erosion Control and Sedimentation Specialist/Turbidity Reduction Analysis	All services associated with the analysis of Turbidity Reduction for existing erosion and sedimentation control on active construction projects	Engineer, Biologist, or Professional		10		Must submit an organization chart identifying the firm's subject matter expert or team and their years of experience, applicable registrations, company history involved in this type work, and verify that they are permanent employees of the firm. Must submit at least one (1) key employee who will be responsible for all communication with the Roadside Environmental Unit. For each employee (engineer, biologist or professional), must submit two (s) examples of work that has been approved/reviewed by the NCDOT or other authority. Each sample of work should include: project lists and descriptions, including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this work will be also considered for prequalification.

ROADSIDE ENVIRONMENTAL UNIT Unit contact: Jeff Walston (919) 707-2944

ROADSIDE ENV-UST REMEDIATION jdwalston@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
544	Underground Storage Tank Program Management /Monitoring/Remediation	All services associated with the managing, monitoring, and remediation of underground storage tanks.	Engineer, Biologist, or Professional		5		Must submit an organization chart identifying the firm's subject matter expert or team and their years of experience, applicable registrations, company history involved in this type work, and verify that they are permanent employees of the firm. Must submit at least one (1) key employee who will be responsible for all communication with the Roadside Environmental Unit. For each employee (engineer, biologist or professional), must submit examples of work and experience involving USTs. Each sample of work should include: project lists and descriptions, including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this work will be also considered for prequalification.

ROADSIDE ENVIRONMENTAL UNIT Unit contact: Jason Prosser (919) 707-2927

ROADSIDE ENV – ENVIRONMENTAL REMEDIATION jfprosser@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
545	Asphalt Testing Laboratory, and Environmental Regulatory Support	Site Investigations including Environmental Forensics, Field Investigation, Data Analyses and Technical Reporting. Site Cleanup including Pilot Testing, Data Analyses, and Remedial Design. Water Resource development including regional water studies, selection of well locations, design and construction of water systems, construction administration. Expert witness support.	Engineer, Earth Scientist, Geologist, Geophysicist, Geochemist, Archaeologist, Biologist, Attorney, or other applicable professional	As appropriate to profession and North Carolina General Statutes	10	As appropriate to profession and North Carolina General Statutes	Potential consultant must submit an organization chart identifying project team, their years of experience, and applicable registrations. Must identify a key employee responsible for all communication with the REU. Description of company history in comparable work that shows knowledge of §130A and Articles 21 & 21A §143, Title 15A NCAC Subchapters 2B & 2L, NC case law applicable to pollution liability, CERCLA, RCRA, SDWA, CWA, etc. Must show at least one work product example (e.g., PA/SSI, RI/CSA/RFI, RI/FS, CAP/RAP, etc.) that has been approved/reviewed by NCDOT or other authority. Work example should include project descriptions, names, and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc.
546	Program Management Services	Support Internal/External Operations on an as needed basis for Stormwater, ATL, LUST, Hazardous Waste, and other REU programs	Engineer, Earth Scientist, Geologist, Geophysicist, Geochemist, Archaeologist, Biologist, Attorney, or other applicable professional	As appropriate to profession and North Carolina General Statutes	25	As appropriate to profession and North Carolina General Statutes	Potential Program Management Support Services consultant must show progressive experience with NC DOT and intimate knowledge of REU operations. Demonstrated knowledge of history and details of storm water program, ATL sites, hazardous waste management program for the department, or other in house programs. Direct experience with senior management including Chief Engineer, AG's office, PSMU, IG, Fiscal Section, Board of Transportation, and NC General Assembly. Direct experience with other regulatory agencies including the US EPA, US ACE, NC DEQ, county health departments, CAPA, and asphalt paving firms. Demonstrable experience performing government cost estimates and working familiarity with SAP including management of LSC and CMPOs.

ROADSIDE ENVIRONMENTAL UNIT Unit contact: Dan Oconnor (919) 707-2924

ROADSIDE ENV – STORMWATER OPERATIONS MANAGEMENT djoconnor1@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
547	Stormwater/NPDES Monitoring and Assessment	All services associated with the management of and implementation of components of the Department's Stormwater Program.	Engineer, Scientist, or other applicable professional	As appropriate to profession and North Carolina General Statutes	10	As appropriate to profession and North Carolina General Statutes	Must submit an organization chart identifying the firm's subject matter expert or team and their years of experience, applicable registrations, company history involved in this type work, and verify that they are permanent employees of the firm. Must submit at least one (1) key employee who will be responsible for all communication with the Roadside Environmental Unit. For each employee (engineer, biologist or professional), must submit two (s) examples of work that has been approved/reviewed by the NCDOT or other authority. Each sample of work should include: project lists and descriptions, including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this work will be also considered for prequalification.
548	Waste/ Wastewater Permitting, Monitoring and Assessment	All services associated with the management of and implementation of a program that addresses various waste/wastewater environmental permitting, assessment, training for DOT related construction and industrial activity wastes.	Engineer, Scientist, or other applicable professional	As appropriate to profession and North Carolina General Statutes	10	As appropriate to profession and North Carolina General Statutes	Must submit an organization chart identifying the firm's subject matter expert or team and their years of experience, applicable registrations, company history involved in this type work, and verify that they are permanent employees of the firm. Must submit at least one (1) key employee who will be responsible for all communication with the Roadside Environmental Unit. For each employee (engineer, biologist or professional), must submit two (s) examples of work that has been approved/reviewed by the NCDOT or other authority. Each sample of work should include: project lists and descriptions, including names and current contact information of clients and owners, resumes, references, certificates, experience descriptions and details, etc. If a firm has previously completed work for the NCDOT, this work will be also considered for prequalification.

RAIL DIVISION

Unit contact: **Greg Keel** **(919) 715-7892**

RAIL-HIGHWAY CROSSING

gkeel@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
182	Railroad Crossing Signal & Traffic Engineering Services	Civil design of grade crossing separation projects.	Project Engineer	P.E.	5	P.E.	Must show experience in design of civil plans for highway-rail grade crossing signals/gates projects at multiple locations. Must show experience in design of railroad-preempted traffic signals. Must have at least one registered PE with experience in grade crossing signals. Must have at least one registered PE with experience in railroad-preempted traffic signals.
		Electrical design of grade crossing signals/gates projects.	Project Engineer	P.E.	5	P.E.	Must show experience in design of electrical/electronic highway-rail grade crossing signals/gates systems. Experience must include track circuits, train detection/ crossing control systems, wiring of flashing light signals and gates, and all other elements necessary for a fully functional automatic grade crossing warning system in accordance with host railroad and NCDOT standards and specifications. P.E. not required, but desired.
		Other traffic engineering services.	Project Engineer	P.E.	5	P.E.	Must show experience with traffic capacity analysis, traffic safety analysis, and highway-rail crossing inventory in accordance with FRA and NCDOT standards and specifications.
255	Traffic Separation Studies & Crossing Evaluation Studies		Project Engineer	P.E.		P.E.	Roadway design experience required. Experience in feasibility studies is a plus, but not a requirement. Experience in railroad work is plus, but not a requirement.

468	Railroad Information & Data Acquisition Liaison	Performs administrative and technical duties in support of NCDOT rail programs. Performs crossing safety evaluations. Evaluates crossing sites for roadway geometry, potential risks, and crossing safety issues. Prepares estimates of probable cost for or value of project decisions. Coordinates exchange of railroad specific information among entities including public, railroad company representatives, and other governmental agencies.			15		Must have extensive experience and demonstrable expertise in the railroad industry specific to crossing safety planning, education, construction, and contract administration, including demonstrated communications skills in negotiating and facilitating crossing project scopes.

RAIL DIVISION

Unit contact: **Greg Keel (919) 715-7892**

RAIL ENGINEERING

gkeel@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
394	Industrial and Yard Track Design and Layout						Must show recent project experience related to the design and layout, from preliminary through final design and construction, of industrial and yard tracks.
395	Freight Main Track Design and Layout						Must show several examples of recent project experience related to the design and layout of freight railroad main track and siding design.
396	Innercity Passenger and HSR Design and Layout						Must show several examples of recent project experience related to the design and layout, from preliminary through final design and construction, of intercity passenger and high speed rail track design.
397	Rail Transit Design and Plans Review						Must show recent project experience related to the design of rail transit projects. In addition, design review contracts should be noted when completed for rail transit stakeholders as this is required for prequalification under this code.
183	Railroad Communications and Signal System Design						Must show project experience in designing discipline components and projects for Class I railroads.
191	Review of Railroad Engineering Drawings, Standards & Specifications						Must show project experience as a reviewer of drawings, standards, and specifications for rail improvement project stakeholders and owners. More than one review contract in recent history is desirable.
176	Rail Construction Project Inspection & Management						Must show the presence of a current safety program, familiarity with railroad construction means and methods, and experience inspecting railroad construction projects for Class I railroads.

178	Rail Corridor Traffic Modeling & Capacity						Must show experience related to rail traffic modeling and capacity studies with recent project history given.
483	Rail Engineering Contracts and Agreements and Business Practices	Develop and review contracts and agreements for rail engineering, planning, crossing safety, and operations and facilities in support of NCDOT rail programs; review Rail business practices to ensure compliance with NCDOT policies and procedures.			5		Must have experience and expertise in the transportation industry specific to contracts and agreements. Should have experience with NCDOT business practices. Experience with SAP (as it relates to NCDOT) is desirable.

RAIL DIVISION

Unit contact: **Greg Keel (919) 715-7892**

PROJECT PLANNING

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Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
180	Rail Functional and Preliminary Design						Must show project experience in rail design at the concept and functional level, to include recently completed projects related to new location or existing alignment improvements. Alternatives analysis history is also desired as it demonstrates the firm's ability to propose various solutions for complex issues.
234	Studies of Economic & Fiscal Impact of Rail Related Activities	Economic analysis of rail related activities.			5		Must show substantial experience estimating direct and in-direct cash inputs to local and regional economies, job creation and other economic impacts resulting from passenger rail and freight rail related activities.
52	Demand Modeling, Ridership, Revenue, Operating Costs for Commuter & Intercity Passenger Rail Operations	Ridership/Revenue modeling for passenger rail systems.			10		Must show substantial experience performing ridership/revenue modeling and forecasting for passenger rail service, including familiarity with the eastern seaboard and Northeast rail corridor.
257	Train Performance & Rail Line Capacity Analysis	Train Performance Calculation and Capacity Modeling.			5		Must show substantial experience performing all aspects of Train Performance Calculation as well as Capacity Modeling for passenger and freight rail systems.
238	Technical & Negotiation Assistance in Securing Rail Lines or Corridors				5		Must show experience in the valuation of railroads, both active and inactive, including corridors and miscellaneous property and rolling stock. Must show experience in negotiations with Class 1 and short-line railroads regarding purchases of right-of-way, equipment, and business interests.

437	Viability Analysis & Support Work for Railroad Related Projects	Activities related to the determination of viability and/or feasibility of rail related projects, both freight and passenger, from the standpoint of: logistics, alternatives analysis, intermodal relationships, performance, economics, regulatory compliance, and other related disciplines. It also covers support areas involving applications and agreements preparation, performance metrics, and all aspects of the rail planning process, both direct and indirect (as in rail-related aspects of "non-rail" transportation projects, such as scoping needs for highway projects that interface with the rail system).					Must show expertise and substantial railroad (passenger and/or freight) related experience in at least one of the following areas: planning, design, operations, maintenance, inspection, regulatory compliance, logistics, intermodal, economic analysis, performance evaluation, coordination/communications, staff support, or related fields as appropriate to specific project needs.

RAIL DIVISION Unit contact: Greg Keel (919) 715-7892

OPERATIONS FACILITIES DESIGN AND MANAGEMENT

gkeel@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
148	Passenger Station Design	NCDOT historically has been involved in renovations of pre-1950 passenger stations and as of late new stations. These newer stations are of the modern style of construction that is being built today.	Project Manager	R.A.	10	AIA	Must show several examples of recent project experience in station design and layout. A broad understanding of the North Carolina Building Codes, FRA rules and regulations, ADA compliance, and local zoning ordinances is required.
107	Historic Passenger Station Renovations	NCDOT historically has been involved in renovations of pre-1950 passenger stations. Historical stations usually contain high levels of asbestos and lead paint. Abatement of these materials is required before renovations begin.	Project Manager	R.A.	20	AIA	Must show several examples of recent project experience in the renovation and restoration of historical stations. A broad understanding of the North Carolina Building Codes, FRA rules and regulations, ADA compliance, and local zoning ordinances is required.
147	Passenger Platforms	NCDOT has been involved in the design, management, and construction of passenger platforms located along railroad tracks.	Project Manager	P.E. or R.A.	10	PE or AIA	Must show several examples of passenger platforms. An understanding of passenger trains; building codes; FRA rules and regulations; Amtrak, CSXT, and NS requirements; and ADA compliance is required.
41	Rail Construction Administration	This is for work specific to the Rail Division. NCDOT is required to oversee the design and construction on any given project. That oversight can be accomplished on the more complex projects with consultants who help in the financial, documentation, and oversight of construction tasks.	Project Manager	P.E. or R.A.	10	PE or AIA	

137	Maintenance Facility	NCDOT has been involved in the design, management, and construction of maintenance facilities located along railroad tracks.	Project Manager	P.E. or R.A.	10	PE or AIA	Must show several examples of maintenance facilities. An understanding of passenger trains, building codes, FRA rules and regulations, ADA compliance, and local zoning ordinances is required.
179	Rail Facilities	NCDOT has been involved in the design, management, and construction of rail facilities.	Project Manager	P.E. or R.A.	10		Must show several examples of rail facilities. An understanding of passenger trains, building codes, FRA rules and regulations, ADA compliance, and local zoning ordinances is required.
181	Rail Sidings	Associated with the NCDOT Preserved Corridors, Train Stations, and Locomotive & Railcar Maintenance Facilities.	Project Engineer	P.E.	5	P.E.	Must show recent project experience related to the design and layout, from preliminary through final design and construction, of industrial and rail sidings.
177	Rail Corridor Maintenance Assessments, Surveys and Lease Studies	NCDOT has been involved in the maintenance, preservation, and reactivation of railroad corridors throughout the state.	Project Engineer	P.E.	5	P.E.	A detailed understanding of maintenance assessments, surveys, and lease studies is required. Must show recent project experience related to the assessments and surveys of work to be completed. Also, show recent examples of lease analysis.
469	Rail Car Lean Tests/High Cant Deficiency	NCDOT is required by the FRA to demonstrate compliance of equipment operating in *Piedmont* service to 49 CFR Part 213, Section 213.57(b) and (d) for maximum cant deficiencies of 3 and 4 inches at operating curving speeds. NCDOT Collects data from static lean testing and route testing to confirm the steady state roll angles, which are suitable for NCDOT equipment to operate at 3 and 4 inch cant deficiencies.	Project Engineer	P.E.	7	P.E.	Must show experience in interpreting 49 CFR Part 213, Section 213.57(b) and (d) for maximum cant deficiencies of 3 and 4 inches at operating curving speeds.

471	Rail Ride Quality Testing	To ensure the best possible quality of ride for passengers on NCDOT equipment and as a maintenance tool, NCDOT occasionally conducts ride quality testing along the *Piedmont* route. NCDOT conducts dynamic state testing utilizing accelerometers mounted to the railcar truck frames and car bodies. This data is collected and analyzed to identify potential equipment maintenance issues or locations of track deficiencies based on locations and trends of above average recorded G loads.	Project Engineer		5	P.E.	
472	Rail Lighting/Signage Testing	NCDOT equipment must comply with and meet all FRA regulations and APTA standards for lighting levels and signage requirements on passenger equipment. NCDOT conducts lighting and signage assessments after refurbishment programs conclude. NCDOT conducts various tests to ensure light levels in various parts of the passenger cabin are above the minimum federally mandated levels for luminosity, emergency lighting meets federal requirements for time and luminescence, and emergency signage placements meet FRA and APTA requirements.	Project Engineer	P.E. Desirable	5	P.E.	

473	Rail Fire Safety Analysis	NCDOT conducts fire safety analysis on all materials used in its rail passenger cars during the refurbishment process and when new material types are incorporated into the railcar passenger area. Fire analysis is required by 49 CFR 238.103 (d) for in service railroad passenger equipment. Information is obtained on material from providers and vendors, consultants examine physical properties within each car, and consultants determine whether any material included in any NCDOT rail passenger car might pose a fire safety risk, which may affect the overall equipment operation.	Project Engineer	P.E.	7	P.E.	
474	Rail Alternative Fuels	NCDOT has been working with the NCSU Environmental Engineering (EE) Department to test the performance of our locomotives on various blends of biodiesel fuel, with the intent of reducing fuel emissions and thus creating a more “green” program. To date locomotives have been tested with biodiesel fuel blends ranging from 10-60% biodiesel, with future plans to continue testing one locomotive to 100% biodiesel fuel. NCDOT will also be evaluating other alternative fuels, including but not limited to, Liquid Natural Gas and Fuel Cell/Hydrogen Technologies.	Project Engineer	P.E. Desirable	7	PhD or P.E.	

475	Positive Train Control (PTC) for Locomotives	Support development of a Positive Train Control Development Plan (PTCDP), which is necessary for compliance with 49CFR236. This development plan will address the locomotive requirements, as part of the full PTCDP implementation. The scope of services includes development of PTC Implementation Plan, Safety Plan, Training Program and Maintenance Program Integration. Provide NCDOT guidance on issues related to the congressional mandate requiring US railroads to implement Positive Train Control (PTC) by December 2015. Provides updates on the status of regulatory requirements being developed by the Federal Railroad Administration (FRA) and how those requirements may pertain to current and planned NCDOT passenger train operations. Provides input and recommendations as part of the development of PTC regulations as per the FRA process. Provides NCDOT representation at PTC conferences and meetings with FRA, Norfolk Southern, CSX and Amtrak. Provides updates/presentations to Department staff and/or other stakeholders relative to pending PTC regulatory requirements. Produce recommendations for grade crossing protection for integration into the PTC system. Produces equipment specifications and installation schedule for NCDOT locomotives, as well as provide installation and implementation oversight services.	Project Engineer	P.E.	7	P.E.	

476	Rail Facilities Track Design	Includes the NCDOT Preserved Corridors, Train Stations, and Locomotive & Railcar Maintenance Facilities.	Project Engineer	P.E.	5	P.E.	Must show recent project experience related to the design and layout, from preliminary through final design and construction, of industrial, passenger station and yard tracks.
477	Rail Architectural Services	Specific to rail passenger train stations or Locomotive and Railcar Maintenance Facilities.	Project Manager	A.I.A.	5	A.I.A.	
478	Rail Reliability Centered Maintenance (RCM)	Technical Support to assess maintenance services for the NCDOT *Piedmont* Service. Tasks include, but are not limited to, Life Cycle Maintenance Projections, Maintenance Plan Efficiencies, evaluation of potential cost reductions, evaluation of current Planned Maintenance Program and identification of Predictive Maintenance (PdM) and/or Condition Based Maintenance Program.	Project Manager	P.E. Preferred	5	P.E. Preferred	
494	Passenger Station Site Design	The associated site design at railroad passenger station projects that include elements such as parking, erosion control, storm water control, utility design, open space, setbacks and other local ordinance, and State and Federal requirements.	Project Engineer or Project Architect	P.E.	10 years	P.E. or AIA	Must show recent project experience related to site design and layout, from preliminary through final design and construction.

RAIL DIVISION

Unit contact: **Greg Keel (919) 715-7892**

RAIL SAFETY OVERSIGHT

gkeel@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
457	Safety Oversight of Rail Fixed Guideway Systems	Safety oversight of rail transit systems and freight railroads through the enforcement and administration of pertinent federal regulations.	Task Manager		5		Must show experience in interpreting, enforcement and administration of Title 49 CFR Transportation Part 659 and associated Parts applicable to the Federal Transit Administration's State Safety Oversight Program.

PROGRAM DEVELOPMENT

Unit contact: Derrick Lewis (919) 707-4663

PROJECT PLANNING

dlewis@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
200	Feasibility Studies						Must show experience in performing detailed Highway Capacity analysis, including mainline analysis (two lane, multilane, arterial & freeway), interchanges, intersections and roundabouts, as well as traffic simulations using advanced traffic modeling software. Must show experience in performing interchange modification and justification studies and preparing conceptual and functional roadway designs using minimal information. Must show experience in performing and documenting NEPA planning documents on various types of improvements.
532	Project Funds Management	Technical assistance with managing State Transportation Improvement Program Project funds and Powell Bill Program. Tasks include, but aren't limited to: creating, modifying, deleting, and closing projects in SAP based on actions by the Board of Transportation or project status; entering updated cost estimates for projects in SAP; SAP reporting; assisting with Powell Bill allocations, applications, local street eligibility determinations, certified statements, digital maps, expenditures, reports, agreements, invoices, and financial monitoring.	Accountant or Fiscal data analyst		10		Must have financial management and/or accounting experience. Must have knowledge of SAP and able to manage project funds within SAP.

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
533	STIP Database Technical Assistance	Technical assistance with STIP database management, queries, and reports. Tasks include, but aren't limited to: managing Microsoft Access and SQL database tables; running specialized queries and reports, both ad hoc and routine, as needed; making changes to database design as needs dictate.	Data Analyst or Database programmer		10		Must have substantial database experience, especially with Microsoft database products. Must have ability to respond quickly to ad hoc requests related to database queries or modifications. Must have working knowledge of Strategic Transportation Investments (STI) and its funding rules, constraints, and structures.
534	STIP GIS and Map Support	Technical assistance to support STIP development of maps and other graphics. Tasks include creating, maintaining, and modifying GIS data layers and creating maps and illustrations using ArcGIS, SDV, NCDOT GIS Online, and other appropriate tools.	Engineering Technician		10		Must have substantial GIS and graphics experience. Must have ability to respond quickly to ad hoc requests related to map generation. Must have working knowledge of Strategic Transportation Investments (STI) and its funding rules, constraints, and structures.
535	STIP Reporting and Analysis	Technical assistance to support STIP development and project delivery. Tasks include, but aren't limited to: data management, analysis, and reporting related to programming functions and STIP development; and data management, analysis, reporting, and correspondence related to filed, rescinded, or litigated Corridor Protection Maps and properties affected by them.	Engineer		10		Must have ability to respond quickly to ad hoc requests related to programming questions, Corridor Map issues, or requested reports. Must have working knowledge of Strategic Transportation Investments (STI) and its funding rules, constraints, and structures. Must have a working understanding of the Corridor Official Map Act (NCGS 136, Article 2E) and NC Session Law 2016-90, Part VI (Map Act Changes).

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
549	Prioritization	Assistance to support the development and implementation of the Strategic Transportation Investments (STI) and other NCDOT project prioritization processes. Tasks include, but aren't limited to, reviewing criteria and data and making recommendations for project evaluation analyses (across all modes of transportation); reviewing and making recommendations of guidelines and/or policies, developing tools/applications; preparing reports and presentations; conducting statistical analyses; reviewing local input point methodologies; providing technical assistance to Division staff, MPO staff, and/or RPO staff; assisting with the evaluation of highway and non-highway projects; training	Engineer		10		Must have working knowledge of Strategic Transportation Investments (STI) and its funding rules, constraints, and structures. Must have ability to respond quickly to ad hoc requests related to prioritization.

VALUE MANAGEMENT UNIT

Unit contact: **Alyson Tamer (919) 707-4806**

VALUE MANAGEMENT

awtamer@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
79	General Meeting Facilitation						
226	Strategic Planning						
373	Team Leader (PE)			PE			
374	Team Facilitator (CVS)			CVS			
375	Partial VE Study Team: Roadway Design Engineer			PE			
376	Partial VE Study Team: Hydraulics Design Engineer			PE			
377	Partial VE Study Team: Structure Design Engineer			PE			
378	Partial VE Study Team: Geotechnical Design Engineer			PE			
379	Partial VE Study Team: Traffic Operations Engineer			PE			
380	Partial VE Study Team: Project Estimator			PE			

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381	Partial VE Study Team: Roadway Construction Engineer			PE			
382	Partial VE Study Team: Bridge Construction Engineer			PE			
383	Roadway Maintenance Engineer			PE			
384	Bridge Maintenance Engineer			PE			
385	Entire VE Study Team (PE)			PE			
386	Constructability Expert						
387	Complementary Service: Information Gathering						
388	Complementary Service: Provide Facility for Team Studies						
389	Complementary Service: Prepare VE Study Report						
390	Complementary Service: Formal Presentation						
391	Complementary Service: Development of Implementation Plans						
392	Procedure Development & Documentation						

393	Value Engineering Training (CVS)			CVS			
484	Partial VE Study Team: Project Development/Planning/Env.						
485	Resource Conservation Expert						

UTILITIES UNIT

Unit contact: **Carl Barclay (919) 707-6982**

UTILITY ENGINEERING

cbarclay@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
173	Public Water Distribution Systems	Analysis of existing Public Water Distribution Systems for conflicts with highway project construction. Design and development of Utility Construction Plans for resolving these conflicts.	Engineer	P.E.		P.E.	Must submit samples of reports of water line analysis. Must submit plans and specifications demonstrating design of water line relocations.
174	Public Water Transmission Systems	Analysis of existing Public Water Transmission Systems (24” minimum diameter) for conflicts with highway project construction. Design and development of Utility Construction Plans for resolving these conflicts.	Engineer	P.E.		P.E.	Must submit samples of reports of water transmission analysis. Must submit plans and specifications demonstrating design of water line relocations.
203	Sanitary Sewer Collection Systems	Analysis of existing Sanitary Sewer Collection Systems for conflicts with highway project construction. Design and development of Utility Construction Plans for resolving these conflicts.	Engineer	P.E.		P.E.	Must submit samples of reports of sanitary sewer line analysis. Must submit plans and specifications demonstrating design of sanitary sewer relocations.
204	Sanitary Sewer Outfall Systems	Analysis of existing Sanitary Sewer Outfall Systems (24” minimum diameter) for conflicts with highway project construction. Design and development of Utility Construction Plans for resolving these conflicts.	Engineer	P.E.		P.E.	Must submit samples of reports of sanitary sewer outfall analysis. Must submit plans and specifications demonstrating design of sanitary sewer outfall relocations.

UTILITIES UNIT

Unit contact: **Amy G. Dupree** **919 707-6996**

UTILITY COORDINATION

agdupree@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
270	Utility Coordination	Analysis of existing overhead and underground dry utilities for conflicts within highway project construction. Identification of ROW/PUE requirements. Design and development of Utility by Others plans by obtaining owner concurrence for proposed utility relocations.					Must submit samples of reports of any project where a utility analysis and preliminary routing was designed for electrical, gas and telephone facilities.

RIGHT OF WAY UNIT

RIGHT OF WAY

Unit contact: **Neil Strickland** **(919) 707-4364**

nstrickland@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
194	Right of Way Negotiators		Right of Way Negotiator	Real Estate Broker's License		Real Estate Broker's License	Must submit resume and experience of firm and all staff that perform this work.
192	Right of Way Appraisals		Right of Way Appraiser	Appraiser's License		Real Estate Broker's License	Must submit resume and experience of firm and all staff that perform this work.
186	Relocation Assistance					Real Estate Broker's License	Must submit resume and experience of firm and all staff that perform this work.
13	Appraisal Review					Real Estate Broker's License	Must submit resume and experience of firm and all staff that perform this work.
185	Relocation Review					Real Estate Broker's License	Must submit resume and experience of firm and all staff that perform this work.
168	Project Management					Real Estate Broker's License	Must submit resume and experience of firm and all staff that perform this work.

Revised as of 3/30/18

170	Property Management					Real Estate Broker's License	Must submit resume and experience of firm and all staff that perform this work.

RIGHT OF WAY UNIT

Unit contact: **Neil Strickland** **(919) 707-4364**

LEAD PAINT

nstrickland@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
339	Lead Paint Testing			NC Accredited Lead Paint Professional Certification	5		Key person must be computer literate.
340	Lead Paint Abatement			NC Accredited Lead Paint Professional Certification	5		Key person must be computer literate.

RIGHT OF WAY UNIT

Neil Strickland **(919) 707-4364**

MOLD

nstrickland@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
341	Mold Testing				5		Key person must be computer literate.
342	Mold Remediation				5		Key person must be computer literate.

Revised as of 3/30/18

RIGHT OF WAY UNIT Unit contact: Neil Strickland (919) 707-4364

ASBESTOS nstrickland@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
343	Asbestos Survey	Inspection		NC Accredited Asbestos Professional Certification	5		Key person must be computer literate.
344	Asbestos Abatement			NC Accredited Asbestos Professional Certification	5		Key person must be computer literate.
345	Asbestos Awareness Training			NC Accredited Asbestos Professional Certification	5		Key person must be computer literate.

DIVISION OF AVIATION

Unit contact: **Kathryn Vollert (919) 814-0571**

DIVISION OF AVIATION kmvollert@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
11	Airport System Planning	Planning a system of airports on a regional or statewide basis. Analysis of previous State Aviation System Plans as well as existing individual Airport Master Plans and as-built drawings, collection of operational data, activity forecasting and demand-capacity analysis.	Project Manager	P.E. or Certified Planner		P.E. or Certified Planning	Must submit recent projects conforming to FAA Advisory Circular 150/5070-7 'The Airport System Planning Process' that are related to Airport System Planning, as well as any projects/studies relating to Advisory Circular 150-5070-6B 'Airport Master Plans' and provide the following for each project/study: project name and owner, number/ type of airports in system, Owner reference/evaluation, commencement and completion dates, and contract value. Must show preparation of a scope of work which has critical review points for both State and FAA input.
10	Airport Planning/Design/ Engineering	Planning and designing an airport conforming to FAA Standards. Analysis of a current Airport Master Plan and as-built drawings, collection of operational data, activity forecasting and demand-capacity analysis, GIS, etc...	Project Manager	P.E. or Certified Planner		P.E.	Must submit projects conforming to both FAA Advisory Circular 150/5300-13 'Airport Design' standards and Advisory Circular 150-5070-6B 'Airport Master Plans' and provide the following for each project: project name and owner, type of airport (Air Carrier or General Aviation), owner reference/evaluation, commencement and completion dates, and contract value. Must show preparation of a scope of work which has critical review points for Local, State and FAA input. Must show knowledge of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303. .

9	Airfield Pavement Management System	Management of Airport Concrete and Asphalt Pavements utilizing Pavement Condition Index (PCI) Surveys and Software. Analysis of current/previous as-built drawings and specifications, collection of inspection data utilizing a PCI survey procedure to objectively determine the functional and structural condition of a pavement.	Project Manager	P.E.		P.E.	Must show that firm is familiar with all FAA Advisory Circulars related to Airport Pavement Design, PCI Survey Procedures (ASTM D5340-98). Must submit three (3) PCI Survey projects completed within the last five (5) years conforming to FAA, US Army Corp., or AASHTO standards and provide the following for each project: project name and owner, pavement thickness/type, owner reference/evaluation, commencement and completion dates, and contract value. Must provide written approach to PCI Survey Procedure including number of teams, visual inspection methods and recording distress information (distress type, quantity and severity), reports and management of airfield pavement surveys to ensure project compliance. Must submit list of equipment for field observations. Must show knowledge of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303.
17	Aviation Economic Impact	Examine and determine the economic impact of commercial and general aviation airports, as well as aviation activities in general, both on the statewide, regional and local/county levels. Analyze any previous Aviation Economic Impact studies, whether on a statewide, regional or local/county level, collect data affecting the economic impact of public airports from airport related business and tenants, collect and analyze economic data from individuals and businesses who utilize the airport by accepted means and determine the total economic impact and present data in an effective format.	Economist or Certified Planner	Certified Planner		Certified Planning	Must show that firm is familiar with all FAA Advisory Circulars that have relational material dealing with Economic Impacts of Airports and Aviation. Must submit projects for Economic Impact Studies greater than $150,000 and provide the following for each project: project name and owner, number and type of airports in study, Owner reference/ evaluation, commencement and completion dates, and contract value. Must submit a preparation of a scope of work which has critical review points for both State and FAA input.

142	Airport Electrical/ NAVAID/Procedure Development	Airport Electronics and Navigational Aids (NAVAIDS), Airspace Obstacle Analysis and TERPS (Terminal Instrument Procedures) Analysis. Analyze requirements for locating and siting, on an individual airports basis, ADS-B, VORs, Localizers, Glideslopes, AWOS, ASOS, ATIS, RCO and GCO, and development of IAP (Instrument Approach Procedures) based upon proposed installation of NAVAIDS.	Project Engineer	P.E. and Licensed Electrical		P.E. and Licensed Electrical	Must submit three (3) Projects completed within the last five (5) years conforming to FAA Advisory Circular 150/5300 -13, 'Airport Design' standards and all FAA Advisory Circular in the 150/5340 and 150/5345-series that are related to Airport Electronics and Navigational Aids, designed utilizing FAA Airways Terminal Instrument Procedures (TERPS) methods and practices, and provide the following for each project: project name and owner, number/type of navigational aids, Owner reference/evaluation, commencement and completion dates, and contract value. Must provide written approach to management of NAVAIDS installations and IAP development projects to ensure project compliance. Must submit equipment list for field observations and obstruction identification and analysis. Must show knowledge of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303.
7	Air Service Studies	Examine and determine the status of scheduled commercial air service upon an airport and it's ground service area and project impacts of improved and/or new service destination markets, economic impact of improved or new scheduled service, on airports , as well as aviation activities in general, both on the statewide, regional and local/county levels. Analyze any previous Air Service Impact studies, whether on a statewide, regional or local/county level, collect data showing the impacts in utilization of improved or new service that was implemented by a scheduled air carrier, collect and analyze economic data from individuals and businesses who utilize the air service by accepted and present data in an effective format.	Economist or Certified Planner	Economist or Certified Planner		Economist or Certified Planning	Must be familiar with the dynamics and economics of the Commercial Air Service Industry, the USDOT/OST Office of Aviation Analysis, FAA Advisory Circulars and Reports that have relational material dealing with Impacts of Commercial Air Service. Must submit recent Air Service Impact Studies and provide the following for each project: project name and owner, number and type of airports in study, Owner reference/ evaluation, commencement and completion dates, and contract value.

4	Air Cargo Studies	Examine and determine the status of air cargo service upon an airport and it's ground service area and project impacts of improved and/or new air cargo service destination markets, economic impact of improved or new air cargo service on airports , as well as aviation activities in general, both on the statewide, regional and local/county levels. Analyze any previous Air Cargo Impact studies, whether on a statewide, regional or local/county level, collect data showing the impacts in utilization of improved or new service that was implemented by an air cargo carrier, collect and analyze economic data from individuals and businesses who utilize the air cargo service by accepted and present data in an effective format.	Economist or Certified Planner	Economist or Certified Planner		Economist or Certified Planning	Must be familiar with the dynamics and economics of the Air Cargo Service Industry, the USDOT/OST Office of Aviation Analysis, FAA Advisory Circulars and Reports that have relational material dealing with Impacts of Air Cargo Service. Must submit recent Air Cargo Service Impact Studies and provide the following for each project: project name and owner, number and type of airports in study, Owner reference/ evaluation, commencement and completion dates, and contract value.
74	Aviation Flight Operations Management	Serves as Chief Pilot in a supervisory and administrative position managing and coordinating the flight operations and maintenance of an aviation department. Supervise, plan, direct, review and evaluate the work of subordinates. Responsible for developing flight schedules. Normally flies both helicopters and fixed wing aircraft. Review and authorize changes to the flight schedule, develop and make changes to methods, procedures, operations, training and maintenance, and establish policy and procedures.					Must have thorough knowledge of the FAA and FCC rules and regulations, and State Statutes governing the operation and maintenance of aircraft. Graduation from high school and a minimum of 2,000 hours of flight time in a closely related type of aircraft and/or type of mission, along with a minimum of six years of related experience. Certification as a FAA commercial or air transport pilot in airlines and/or rotorcraft, and possession of an FAA Class II Medical Certificate. Also required are ratings in multi-engine (land), instrument flying and others as designated. Good flying safety record, no reportable incidences or accidents in the last 10 years. No FAA incidences or violations in the last 10 years. No failed FAA or military flight evaluations. Must have single and multi-engine fixed and /or rotary wing aircraft.

71	Aviation Executive Pilots (Captains & F.O.)	Pilot single or twin engine, fixed and/or rotary wing aircraft, in a variety of mission flights including point to point passenger flights, photogrammetry, and occasional search and rescue. Conduct pre-flight and post-flight inspections of aircraft and note all discrepancies in a maintenance log, and maintain all other necessary logs and reports related to their flights. Work includes planning flights considering weather, navigational aids, routing, altitudes, alternative routes and destinations, loading and weight distribution, fuel requirements, and the filing of IFR flight pans as necessary. Perform piloting assignments as pilot in command and does not normally have any direct supervision available. Operation manual details the rules and regulations of procedures, conduct, training, flight operations, flight crew coordination and operational limitations of equipment.					Must have thorough knowledge of the FAA and FCC rules and regulations, and State Statutes governing the operation and maintenance of aircraft. Graduation from high school and a minimum of 1,500 hours of flight time in a closely related type of aircraft and/or type of mission, along with a minimum of six years of related experience. Certification as a FAA commercial or air transport pilot in airlines and/or rotorcraft, and possession of an FAA Class II Medical Certificate. Also required are ratings in multi-engine (land), instrument flying and others as designated. Good flying safety record, no reportable incidences or accidents in the last 10 years. No FAA incidences or violations in the last 10 years. No failed FAA or military flight evaluations. Must have single and multi-engine fixed and /or rotary wing aircraft.
8	Aircraft Maintenance	Aircraft mechanic for fixed wing and/or rotary aircraft. Work involves the inspection, maintenance, modification, and repair of airframes, power plants and related systems for fixed wing and/or rotary aircraft. Expected to independently perform routine work, research maintenance and service manuals and complete all necessary repair/inspection reports and entries.					Must have thorough knowledge of the FAA and FCC rules and regulations, and State Statutes governing the operation and maintenance of aircraft. Graduation from an FAA approved aviation maintenance school and one year of experience in aircraft inspection, maintenance and repair; or graduation from high school and three years of related experience; or an equivalent combination of training and experience. Possession of a valid FAA Airframe and Power plant license. Working knowledge of the tools, equipment and methods used in the inspection, maintenance and repair of aircraft. Working knowledge of FAA rules and regulations concerning aircraft inspection and repair. Ability to read and interpret technical manuals and troubleshoot technical problems and complete repairs. Good communication with others to ensure safe operations and good situational awareness will be maintained during all maintenance procedures. No reportable incidences or accidents in the last 10 years. FAA rules and regulations require most maintenance repair and inspection jobs, be certified that the mechanic's work is in

							compliance with these rules and regulations. On major overhauls, repairs, and alterations or inspections, the work must reviewed and certified by an Inspector (IA Certification) authorized by the FAA. No FAA incidences or violations in the last 10 years.
73	Flight Operations/Training	Trained to fly and fix the division's aircraft. Self-study and attend certified vendors of semi-annual and annual training. Fly and maintain single and multi-engine fixed and /or rotary wing aircraft.					Certification as a FAA commercial or air transport pilot in airlines and/or rotorcraft. Also required are ratings in multi-engine (land), instrument flying and others as designated. Possession of a valid FAA Airframe and Power plant license. Ability to attend training and pass the course syllabus for single and multi-engine fixed and/ or rotary wing aircraft. Good flying safety record, no reportable incidences or accidents in the last 10 years. No FAA incidences or violations in the last 10 years.
20	Avionics System Development	NextGen Technologies including Ground Stations and Airborne Electronic Systems for Aircraft Communication and Navigation. Development of Automatic Dependent Surveillance-Broadcast (ADS-B) and other NextGen Technologies. Provide written approach to management of airfield projects to ensure project compliance.	Project Engineer	P.E.		P.E., Electronics or Scientific	Must submit an key personnel responsible for development of NextGen Equipment (both ground based and airborne), involvement in FAA NextGen Demonstration Project(s) in the National Airspace System (NAS), familiar with "FAA Modernization and Reform Act of 2012" and all NPRM (Notice of Proposed Rule Making) relating to NextGen and ADS-B development, and provide the following for each project: project name and owner, number/type of NextGen navigational aids, Owner reference/evaluation, commencement and completion dates, and contract value. If airport airside access is necessary, must show knowledge of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303. Must state whether firm has defaulted or failed to complete contractual obligations with the last 10 years, whether firm has ever been terminated due to the quality of their work, and must provide surety information (name, rating and limits). Must submit equipment for development and testing of NextGen Navigational Aids.
12	Airspace Analysis	Development of Airspace Analysis/ Classification Studies. Analyze existing and proposed Airspace Classifications (Class A through Class G), requirements for locating and siting, on an individual airports basis. Provide written approach to management of Airspace Study to ensure project compliance.	Project Engineer or Certified Planner	P.E. or Certified Planner		P.E. or Certified Planner	Must submit recent Studies/Projects conforming to Federal Aviation Regulation (FAR) Part 91, 'General Operating and Flight Rules', Parts 71, 'Designation of Class A, B, C, D, and E Airspace Areas; Airways; Routes; and Reporting Points', Part 73, 'Special Use Airspace', Part 77, 'Objects affecting navigable airspace' and all FAA Advisory Circulars, Reports and Orders related to Airport Airspace, knowledge of FAA Airways Terminal Instrument Procedures (TERPS) methods and practices, and provide the following for each project: project name and owner, number/type of navigational aids, Owner reference/evaluation, commencement and completion dates, and contract value. If airport airside access is necessary, must show knowledge of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303. Must submit surveying tools/equipment for field observations and obstruction identification and analysis if necessary.

19	Airport Safety Analysis/ Inspection	Perform Safety Inspection of Airports. Perform FAA Airport Master Record Inspection per FAA Office of Aeronautical Information Services, FAA Order 5010.4, 'Airport Safety Data Program', reporting findings and data in an effective format to the NFDC (National Flight Data Center). Provide written approach to airport inspection procedure to ensure project compliance.	Trained Airport Safety Data Inspector				Must be familiar with FAA Office of Aeronautical Information Services, FAA Order 5010.4, 'Airport Safety Data Program', Advisory Circular 150/5300-13, 'Airport Design' and all Orders/Reports related to airport inspection, successful graduate of FAA mandated training seminar in FAA Form 5010-1 Airport Inspection Procedures, and provide a list of previous 5010 Inspections and the following for each airport: project name and owner, number of inspections performed, Owner reference/ evaluation, commencement and completion dates, and contract value. Must be knowledgeable of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303. Must state whether firm has defaulted or failed to complete contractual obligations with the last 10 years, whether firm has ever been terminated due to the quality of their work, and must provide surety information (name, rating and limits). Must submit surveying equipment for field observations.
430	Airport Pavement Design	Design of Airport Concrete and Asphalt Pavements. Rigid and Flexible Pavement Sub-base Courses, Treated Subgrade, Sub-base Courses, Base Course, Treated Base Courses on active airfield runway, taxiway and apron. Provide written approach to design and management of airfield paving projects to ensure project compliance.	Project Engineer	P.E.		P.E.	Must be familiar with all FAA Advisory Circulars, Reports and Orders related to Airport Pavement Design. Must submit three (3) Design Projects conforming to FAA, US Army Corp or AASHTO standards greater than $500,000 and provide the following for each project: project name and owner, pavement thickness, Owner reference/evaluation, commencement and completion dates, and contract value. If airport airside access is necessary, knowledgeable of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303.
431	Airport Construction Admin/ Inspection	Inspection of Airport Construction, Supervision of work performed by all Contractors. Perform Construction Administration and Inspection of work performed by all Contractors on a project according to FAA, AASHTO, Codes and Applicable Industry Standards, reporting findings and data in an effective format to comply with Project Specifications and Compliance. Provide written approach to airport construction admin and inspection procedures to ensure project compliance.	Project Engineer	P.E.		P.E.	Must be familiar with FAA Advisory Circular 150/5370-12A, 'Quality Control of Construction', Advisory Circular 150/5370-10F(Draft), 'Standards for Specifying Construction of Airports', and all FAA Orders/Reports/Engineering Guidance Bulletins related to airport construction inspection, and the following for each Airport Construction Admin/Inspection performed: project name and owner, number of inspections performed, Owner reference/evaluation, commencement and completion dates, and contract value. Knowledge of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303. Must state whether firm has defaulted or failed to complete contractual obligations with the last 10 years, whether firm has ever been terminated due to the quality of their work, and must provide surety information (name, rating and limits). Must submit surveying and testing equipment for field observations.

432	Airport Approach/Obstruction Surveying	Identification and Analysis of obstruction to Aerial Navigation in Airport Approaches. Perform Identification/Analysis Survey of Critical Obstructions in Airport Approaches. Provide written approach to management of Obstruction Study to ensure project compliance.	Project Engineer/ Land Surveyor	P.E. and/or P.L.S.		P.E. and/or P.L.S.	Must submit three (3) Studies/Projects completed within the last five (5) years identifying Airport Approach Obstructions conforming to Federal Aviation Regulation (FAR) Part 77, 'Objects Affecting Navigable Airspace' and FAA Advisory Circular 50/5300-13, 'Airport Design' and all FAA Orders/Reports related to airport approach obstruction inspection, and provide a list of previous obstruction surveys and the following for each airport approach surveyed: project name and owner, type of approach, number/type of navigational aids, Owner reference/evaluation, commencement and completion dates, and contract value. Knowledge of FAA Runway Safety Publications and had initial or recurrent training for CFR Part 130.303. Must state whether firm has defaulted or failed to complete contractual obligations with the last 10 years, whether firm has ever been terminated due to the quality of their work, and must provide surety information (name, rating and limits). Must submit surveying tools/equipment for field observations and obstruction identification and analysis.
490	Aviation Education & Outreach Services	Program management, education and outreach, public involvement, communications, marketing, etc.	Communications specialist, Training Specialist	BS or BA in related field	5 years		Must have experience and expertise in public involvement, marketing, education and bachelor's degree in related field.
491	General Division Program Support	Support for Airport Project Managers, Engineers, etc.	Project Engineer, Certified Planner	BS or BA in related field	5 years		Must have level of experience/education combination that is appropriate for the position being supported. Project management experience and aviation experience is required.
492	Division Grants Administration Support	Support for grants administration staff including production of FAA subgrants to airport sponsors, data input and management, and general grant program.	Grants administrator		5 years		Must have level of experience/education combination that is appropriate for the position being supported. Main responsibilities of this position, including but not limited to fiscal administrative experience related to grant funding programs, both federal and state, grant writing, contract monitoring, fiscal approvals, working with federal and state agencies to provide timely responses to aviation stakeholders, SAP financial functions, etc.
493	Special Studies for Aviation	Value engineering, policy analysis, data analysis and management, web hosting, state and federal compliance studies, airport land acquisition, infrastructure evaluations, independent fee estimates, feasibility studies, etc.	Preferred Project Manager, P.E., or Certified Planner	BS or BA in related field			Must have adequate or required education, licensure, or certification for the type of work needed in the special studies category and experience with special study that is relevant or similar.

550	Unmanned Aircraft System (UAS) Program Support	Support for UAS Program Office, including UAS operational management, program development and implementation, federal and state UAS policy analysis, UAS technology research, airspace integration, etc.	Project Manager, Program Manager	BS or BA in related field	3-5 years		Must show firm has experience in UAS Program implementations and management, has strong understanding of both federal and state UAS related regulations and laws, UAS technology implementation, and working with federal, state, and local government agencies to provide timely response to UAS stakeholder. The firm must show experience in working with federal, state and/or local governments in the development of UAS focused policy and procedures, development and implementation of UAS training programs, and UAS airspace management.
551	Unmanned Aircraft System (UAS) Operator	Pilot multi-rotor and/or fixed wing UAS, in a variety of mission, UAS operations including photography, video photography, photogrammetry, and occasional search and rescue. Conduct pre-flight and post-flight inspections of UAS and note all discrepancies in a maintenance log, and maintain all other necessary logs and reports related to their UAS flights. Work includes planning UAS operations considering weather, airspace authorizations, night operations, altitudes, communicating with visual observer(s), and the filing of NOTAMS as necessary. Perform piloting assignments as pilot in command and does not normally have any direct supervision available. Operation manual details the rules and regulations of procedures, conduct, training, flight operations, flight crew coordination and operational limitations of equipment.			1-3 years		Must show proof of 20 hours of pilot-on-command for UAS commercial or government operations, FAA Remote Pilot Certificate with Small UAS rating, NC Commercial or Government UAS operator permit, ability to obtain airspace waivers/authorizations for Class Surface E, D, C, and B airspace. Must have general liability insurance for UAS operations, standardized training protocols implemented, and routine maintenance schedule for utilized UAS. Must show proof of no FAA violations in the last 5 years.

552	Unmanned Aircraft System (UAS) Operations Management	Provide UAS operational support to the NCDOT, including providing qualified pilots, operate both multi-rotor and fixed wing UAS, responsible for developing operations schedules, coordinating training, obtaining waivers/authorizations, and data management.		BS or BA in related field	3-5 years		Must show firm has experience conducting civil UAS operations within the NAS, UAS operational experiences should include photogrammetry and infrastructure inspection, have thorough knowledge of the FAA rules and regulations, and State Statutes governing the operation, standardized training protocols implemented, and routine maintenance schedule for utilized UAS, and history of obtaining airspace waivers/authorizations for Class Surface E, D, C, and B airspace. Must submit a list of UAS operator qualifications and equipment to be used in the field. The firm must show it has no FAA violations in the last 5 years.

BICYCLE & PEDESTRIAN

Unit contact: **Ed Johnson (919) 707-2604**

BICYCLE & PEDESTRIAN

erjohnson2@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
315	Municipal & Regional Planning Studies						
316	Multi-Use Trail Design, Survey & Layout						
318	Bicycle Map Preparation						
132	Landscape & Streetscape Design						

TURNPIKE AUTHORITY

Unit contact: **Dennis Jernigan** **(919) 707-2715**

OPERATIONS & MAINTENANCE

dwjernigan@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
320	General O&M Knowledge						
321	Level 1 – Preliminary O&M Plan						
322	Level 2 – Final O&M Plan						
323	Level 3 – Investment Grade O&M Services						
324	Other O&M Services						

TURNPIKE AUTHORITY

Dennis Jernigan (919) 707-2715

dwjernigan@ncdot.gov

GENERAL TOLL KNOWLEDGE

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
365	Infrastructure/Interface & Coordination						
366	Toll System Planning & Design						
367	Toll Standards Development						
368	Toll System RFP Development						
369	Toll Operation Marketing Strategy						
370	Toll Collection Facilities & Equipment						

TURNPIKE AUTHORITY

Unit contact: **Dennis Jernigan (919) 707-2715**

OTHER TOLL SERVICES

dwjernigan@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
371	Traffic and Revenue Forecasts						
372	HOT Lane Studies						

PHOTOGRAMMETRY

Unit contact: Rob Allen (919) 707-7094

PHOTOGRAMMETRY roballen@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
157	Photogrammetric Services	The work consists of photogrammetrically compiling planimetric, topographic, and DTM data; field classifying planimetric features; collecting and mapping cadastral data from existing county tax bases; merging the compiled photogrammetric data with field data such as planimetric classification, cadastral data, and utility data; producing planimetric maps, topographic maps, base plan sheets, digital orthophotography, and DTM data as specified in the NCDOT Photogrammetry Unit manuals; and delivering the planimetric maps, topographic maps, base plan sheets, digital orthophotography, and DTM data in both digital and hardcopy formats.	Land Surveyor	P.L.S.		P.L.S.	Must submit examples of work of that include: Planimetric mapping file in Microstation V8 DGN format; Digital Terrain Model (DTM) in Microstation V8 DGN format; Orthophoto in TIF and SID formats with associated world files. All mapping and base plan sheet digital data shall be delivered in MicroStation design files that conform to the NCDOT Photogrammetry Unit level structure and symbology specifications; DTM data shall be delivered in MicroStation 3-D design files that conform to the NCDOT Photogrammetry level structure and symbology specifications. Digital orthophotography shall be delivered in either MrSID format or TIF format with associated world files. The firm must be capable of providing full photogrammetric services, including aerotriangulation, DTMs, digital data delivery, cadastral mapping and field classification. Must submit a list of the hardware and software in use at the office that will perform these services. Must include the location of the office being prequalified.

2	Aerial Imagery Services	The work consists of acquiring high-resolution metric aerial imagery at various altitudes above mean ground level (AMGL) ranging from 300 feet to 15,000 feet.	Land Surveyor	P.L.S.		P.L.S.	Must submit a list of the hardware (planes, cameras, GPS/IMU equipment, etc.) and software (flight planning, post processing, etc.) in use; the base of operation; and list of sub-consultants you propose using. For aerial imagery missions at 1500 feet AMGL or higher, the metric aerial imagery system shall be a large format digital frame camera with a Global Positioning System/Inertial Measurement Unit (GPS/IMU) to provide object space exterior orientation data. For low altitude (less than 1500 feet AMGL) aerial imagery missions, the metric aerial imagery system shall be either a large format or medium format digital frame camera, or a 9 inch format metric film camera. In all cases, the metric aerial photographic system shall provide forward motion compensation and be able to meet the accuracy requirements for low altitude imagery (+/- 0.05' at 300 feet AMGL). All data for the GPS/IMU work listed above shall be prepared in both hardcopy and ASCII formatted electronic files.

GENERAL SERVICES DIVISION

Unit contact: Thomas Riddick (919) 707-4560

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ARCHITECTURE

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
332	Building Design						
333	Building Construction Administration						
334	Advance Planning						
335	Programming Studies						
336	Roof Design						
337	Estimating						

GENERAL SERVICES DIVISION Unit contact: Thomas Riddick (919) 707-4560

SITE CIVIL ENGINEERING tlriddick@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
338	Building Site Design						

GENERAL SERVICES DIVISION Unit contact: Thomas Riddick (919) 707-4560

PLUMBING, MECHANICAL & ELECTRICAL ENGINEERING

tlriddick@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
346	Plumbing Design						
347	Mechanical Systems Design						
348	Commissioning						
349	Life Cycle Cost Analysis						
350	Building Envelope Design						
351	Electrical Engineering Design						
352	Lighting Control Design						
353	Fire Protection/Fire Alarm System Design						
354	HVAC						
355	Geothermal Design						
356	Energy Modeling						

GENERAL SERVICES DIVISION Unit contact: Thomas Riddick (919) 707-4560

STRUCTURAL ENGINEERING

tlriddick@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
357	Building Structural Design						
358	Building Foundation Design						
359	Special Inspections						

GENERAL SERVICES DIVISION Unit contact: Thomas Riddick (919) 707-4560

ARCHITECTURE

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Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
360	Topographic Surveying						
361	Boundary Surveying						
362	Easement Surveying						

STATE ROAD MAINTENANCE UNIT

Unit contact: **Josh Kellen (919) 835-8491**

DISASTER MONITORING

jkellen@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
398	FEMA Compliance Monitoring & Auditing	The work consists of coordinating with NCDOT personnel to ensure that FEMA rules and regulations for monitoring operations are being following. In addition, performs audits to all collected data to validate that FEMA rules and regulations are being adhered to.	Project Manager and Accountant				Must be familiar with FEMA Public Assistance rules and regulations as well as FEMA debris management practices. Please list all prior experience. Must be willing to travel statewide to discuss debris removal operations with NCDOT field personnel.
399	Disaster Recovery Planning	The work consists coordinating with NCDOT Disaster Recovery and field personnel to develop and implement disaster recovery plans during federally declared disasters.	Project Manager				Must be familiar with FEMA Public Assistance rules and regulations as well as FEMA debris management practices. Also, knowledge of NCDOT disaster recovery operations is required. Please list all prior experience. Must be willing to travel statewide to effectively plan with NCDOT field personnel.
400	Debris Removal Monitoring	The work consists of observing NCDOT debris removal contractors, documenting all aspects of the debris operation, and enforcing any/all FEMA rules and regulations to ensure maximum reimbursement for NCDOT.	Project Manager and Technician(s)				Must be familiar with FEMA Public Assistance Rules and regulations as well as FEMA debris management practices. Please list prior experience. Debris shall be tracked from its origin to its final resting place and documented accordingly. Therefore, one debris monitor will be required for each debris removal crew and a monitor(s) will be required at the designated debris waste sites. The Project Manager shall oversee technicians conducting the monitoring and communicate any observations/issues/concerns to NCDOT field personnel. Transportation for all technicians conducting monitoring operations shall be supplied by the monitoring firm. Monitors will be required to capture pictures of the debris removal operation, provide GPS coordinates, and track loads of every/all trucks using NCDOT's load ticket method. Other methods of tracking are welcomed but will need to be reviewed prior to use in the field.

401	Disaster Recovery Data & Accounting	The work consists of compiling and managing all data captured in the debris removal operations. This position shall also be responsible for the final submission of all data for the completed disaster debris removal operation.	Accountant				Must be familiar with the FEMA Public Assistance rules and regulation as well as FEMA debris management practices. Must work with NCDOT disaster recovery personnel to match all data records. Please list all prior experience.
402	Truck Verification/ Certification	The work consists of verifying and certifying all trucks used in the debris removal operation by NCDOT's debris removal contractor.	Project Manager and/or Technician(s)				Must be familiar with FEMA Public Assistance rules and regulations as well as FEMA debris management practices. Please list all prior experience.
403	Load Ticket Certification	The work consists of combining load ticket information and invoices supplied by NCDOT's debris removal contractor and verifying that all load tickets match the submitted invoices.	Technician or Accountant				Must be familiar with FEMA Public Assistance rules and regulations as well as FEMA debris management practices. Please list all prior experience.

PUBLIC TRANSPORTATION DIVISION

Unit contact: Blair Chambers 919-707-4693

tbchambers@ncdot.gov

TRANSIT SYSTEM PLANNING SERVICES

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
410	Community Connectivity Plans (formally Community Transportation Service Plans)	To identify, evaluate, develop, recommend and implement strategies that provide planning elements for meaningful mobility options for the general public and targeted populations by allowing passengers to travel where and when they want and need to go.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)
411	Transit System Consolidation Studies	Develop recommendations and alternatives for consolidation of community transit systems.	Minimum of 2 primary staff personnel		5		
412	Transit Facility Feasibility Studies for Transit Support Structures	Determine if transit facilities are viable and practical for transit system.	Minimum of 2 primary staff personnel		5		
413	Transit Support Feasibility and Implementation Studies	Develop supporting information necessary to guide overall system implementation and supportive policy action.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)
414	Other Special Transit Studies	Provide assistance on special transit planning related needs.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)

419	Transit Service Productivity Review and Analysis	Develop productivity trends and outline possible strategies for transit.	Minimum of 2 primary staff personnel		5		
498	Public involvement in the transit/transportation planning process	Provide public mediation and facilitation methods for the development of public transportation planning projects.	Minimum of 2 primary staff personnel		5		
499	Marketing, publications and graphics assistance	Assist in preparing and project managing publications for Public Transportation Divisions promotional and study deliverable material.	Minimum of 2 primary staff personnel		5		
500	Marketing research	Gather and analyze travel behavior data on transit systems and research market conditions for modeling and planning.	Minimum of 2 primary staff personnel		5		
501	Multimodal facilities planning	Development and implementation of major transportation capital improvements active transportation improvements and related project work including project planning, project design administration, contract administration, and project and program development and implementation.	Minimum of 2 primary staff personnel		5		
502	Transportation Demand Management program management	Assist in the management of statewide TDM program focusing on changing or reducing travel demand.	Minimum of 2 primary staff personnel		5		

PUBLIC TRANSPORTATION DIVISION

Unit contact: Blair Chambers 919-707-4693

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2. TRANSIT SYSTEM FEDERAL AND STATE COMPLIANCE SERVICES

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
417	Conduct Compliance Reviews for Transit System	Conduct discretionary compliance reviews of grant recipients and sub recipients to determine whether they are honoring their commitments, as represented by certification, to comply with the requirements of FTA and State funded transit programs.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)
503	Conduct drug and alcohol review program	Provide statewide DAMIS report and conduct discretionary drug and alcohol reviews of grant recipients and sub recipients to determine whether they are honoring their commitments, as represented by certification, to comply with the requirements of FTA and State funded transit programs.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** **(Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)**
504	Conduct safety management system (SMS) review program	Conduct discretionary SMS reviews of grant recipients and sub recipients to determine whether they are honoring their commitments, as represented by certification, to comply with the requirements of FTA and State funded transit programs.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** **(Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)**

PUBLIC TRANSPORTATION DIVISION

Unit contact: Blair Chambers 919-707-4693

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3. TRANSIT SYSTEM CONSTRUCTION ADMINISTRATION SERIVCES

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
505	Transit facility construction project oversight, administration, inspection, management and/or monitoring	Provide oversight services for project construction of FTA funded new or renovated transit facilities.	Minimum of 2 primary staff personnel	PE or AIA	5	PE or AIA	
506	Small transit facility design services	Provide design services assistance in the development of a standardized administrative, operational and/or maintenance transit facility.	Minimum of 2 primary staff personnel	PE or AIA	5	PE or AIA	

PUBLIC TRANSPORTATION DIVISION

Unit contact: Blair Chambers 919-707-4693

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4. TRANSIT SYSTEM TECHNICAL ASSISTANCE

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
424	Transit Program Funding Formula Allocation Analysis	Review and evaluate the current funding formula allocations.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)
425	State Management Plan Development and Update	Provide technical assistance on the update for FTA adoption.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)
426	Program System Analysis	Operational and route studies to assist transit agencies in maximizing resources by determining efficient route patterns	Minimum of 2 primary staff personnel		5		
428	Vehicle Specification Preparation and Analysis	Provide innovative solutions and guidelines for fleet management challenges and utilization for transit systems.	Minimum of 2 primary staff personnel		5		
507	Vehicle statewide procurement/bid analysis and assistance	Provide assistance in the development of statewide vehicle procurement contracts.	Minimum of 2 primary staff personnel		5		
508	Performance efficiency and excellence guidebook	Building out Success Plans and managing quarterly reporting and Net Promoter Scoring	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)

509	Quick response teams	Rapid rescue and recovery technical assistance for transit systems in need to include programming, reporting, project management, administration, operations and financial assistance.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)
510	Fleet camera system assessments	Provide assessment and evaluation of the use and maintenance of fleet camera systems.	Minimum of 2 primary staff personnel		5		**Firm demonstrates rural transit experience and qualifications.** (Rural transit experience includes human service agency, Community Transit Systems, regional and single county rural systems, demand responsive, etc.)
511	Transit facility and equipment maintenance management program assistance	Provide community transit agencies with assistance and guidance on the appropriate facility maintenance as required by FTA.	Minimum of 2 primary staff personnel		5		
512	Grant writing and management	Provide assistance on effective grant design, development and program management on federal and state grant funding programs for transit systems.	Minimum of 2 primary staff personnel		5		
513	Transit system coordination services	Coordination with urban providers, intercity bus carriers, transit providers in other states, health and human service organizations, and private non-profits such as community organizations, senior centers, faith-based organizations, and other similar organizations.	Minimum of 2 primary staff personnel		5		

CONTRACTUAL SERVICES UNIT

Unit contact: **Mickey Biedell** **(919) 707-4803**

GOAL SETTING

mbiedell@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
435	Aspirational Goal Setting						Requirements will be listed in the Advertisement for firms interested in becoming prequalified for this discipline.

CONTRACTUAL SERVICES UNIT

Unit Contact: **Mickey Biedell** **(919) 707-4803**

DISPARITY STUDY

mbiedell@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
436	Disparity Study						Requirements will be listed in the Advertisement for firms interested in becoming prequalified for this discipline.

PORT AUTHORITY

Unit contact: **Mark Blake (910) 251-5674**

PORT SHIP TERMINAL FACILITY DESIGN

mark.blake@ncports.com

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
445	Berth & Wharf Structures	Deepwater structures to serve ocean-going vessels, and support loads from cranes, on-dock rail, wheeled vehicles.	Marine / Structural Engineers	P.E.	5	P.E.	Must show substantial experience and knowledge of berth and wharf structures. Preference is to have structural engineers who are also certified divers.
446	Mooring & Breasting Structures & Equipment	Structures, product and equipment for mooring and breasting of ocean-going vessels	Marine / Structural Engineers	P.E.	5	P.E.	Must show substantial experience and knowledge of mooring and breasting structures and equipment.
447	Dredging	Design of dredging work near Port berths. May include stability analyses and hydrographic surveying.	Hydraulic / Geotechnical Engineers	P.E.	5	P.E.	
448	Marine Terminal Design – Containers, Intermodal, Bulk & Break-Bulk Materials	Conceptual planning and design of marine facilities in the various transportation modes of container, intermodal, bulk and breakbulk. Bulk products may include liquid and dry bulk.	Civil / Structural Engineers Port Planner	P.E.	5	P.E.	Must show substantial experience and knowledge of planning and design of marine terminals.

PORT AUTHORITY Unit contact: Mark Blake (910) 251-5674

PORT CRANE MAINTENANCE

mark.blake@ncports.com

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
449	Ship-to-Shore Container Crane Maintenance	Evaluation, assessment, repair and maintenance recommendations, and design of container cranes.	Civil / Structural / Electrical Engineers	P.E.	5	P.E.	Must show substantial experience and knowledge of design and maintenance of ship-to-shore container cranes.
450	Ship-to-Shore Gantry Crane Maintenance	Evaluation, assessment, repair and maintenance recommendations, and design of gantry cranes (rail-mounted cranes that rotate on a turntable).	Civil / Structural / Electrical Engineers	P.E.	5	P.E.	Must show substantial experience and knowledge of design and maintenance of ship-to-shore gantry cranes.

PORT AUTHORITY Unit contact: Mark Blake (910) 251-5674

PORT FACILITIES PAVEMENT MAINTENANCE

mark.blake@ncports.com

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
451	Concrete Pavement Management for Ports	Assessment, evaluation, repair and design of concrete pavements specifically designed for the loadings of a deep water marine facility.	Civil Engineer	P.E.	5	P.E.	Must show experience and knowledge of design and maintenance of concrete pavements at deep water marine facilities. Experience and knowledge of concrete pavements for airport runways and taxiways will be considered.
452	Asphalt Pavement Management for Ports	Assessment, evaluation, repair and design of asphalt pavements specifically designed for the loadings of a Deepwater marine facility.	Civil Engineer	P.E.	5	P.E.	Must show experience and knowledge of design and maintenance of asphalt pavements at deep water marine facilities. Experience and knowledge of asphalt pavements for airport runways and taxiways will be considered.

PORT AUTHORITY Unit contact: Mark Blake (910) 251-5674

PORT FACILITIES ELECTRICAL SYSTEMS mark.blake@ncports.com

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
453	Distribution Systems for Low/Medium & High Voltage	Evaluation, assessment and design of distribution systems for a deepwater marine facility, including electrical supply to cranes, refrigerated containers, sheds and warehouses, and (potentially in future) rubber-tired or rail-mounted gantry crane sin the container yard.	Electrical Engineer	P.E.	5	P.E.	Must show experience and knowledge of design and maintenance of industrial electrical distribution systems.
454	Lighting for Warehouse & Open Storage Cargo Areas	Evaluation, assessment and design of lighting systems for a deepwater marine facility, including sheds and warehouses, container yards, and general open storage areas.	Electrical Engineer	P.E.	5	P.E.	Must show experience and knowledge of design and maintenance of industrial lighting systems.

PORT AUTHORITY — Unit contact: — Mark Blake (910) 251-5674

PORT SECURITY & SURVEILLANCE DESIGN — mark.blake@ncports.com

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
455	Security & Surveillance Design	Must possess a thorough knowledge of federally-mandated security features for seaports, and an understanding of their design and implementation.	Electrical / Security / Communication Engineers	P.E.	5	P.E.	Must show experience and knowledge of design and maintenance of security and surveillance systems.

PORT AUTHORITY — Mark Blake (910) 251-5674

PORT LONG RANGE PLANNING — mark.blake@ncports.com

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
456	Long Range Port Planning	Must possess a thorough knowledge of port industry, shipping and maritime trade, and the associated infrastructure requirements both on the Port and outside the Port (connecting to the Port) in order to assess and recommend guidance, policies, and projects that most effectively improve the logistics system for ocean-going freight.	Port planner	AICP	5		Must show substantial experience and knowledge of port industry, shipping and maritime trade.

HIGHWAY OPERATIONS Unit contact: Camille Coombes (919) 835-8212

OPERATIONS PROGRAM MANAGEMENT

crcoombes@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
404	High Speed Data Collection and Processing	Collection of Pavement Condition and/or Roadside Inventory Information including, but not limited to: Pavement Imagery and Pavement Condition Evaluation, Right-of-Way Imagery, Pavement Profile and Rutting, Sign and Guardrail Inventory, and Pavement Inventory	Data Collection Technician, Data Manager and Data Analysis		4		Must submit references including contact information from three (3) or more agencies for which data has been collected and description of work performed.
405	Quality Assurance for High Speed Data Collection	Validation (QA/QC) of pavement condition data collected and processed during High Speed Data Collection. Working in conjunction with NCDOT and data collection contractor to address and prevent errors.	Data Analyst		3		Must submit at least one (1) example of previous QA/QC efforts conducted for other agencies. Must submit references with contact information.
150	Pavement Condition Surveys	Pavement distress identification and completion of survey forms.	Senior Technician/ Engineer		2		Must show completion of NCDOT Training course and two (2) years of experience performing NCDOT surveys.
539	Pavement Management Best Practices	Engineering support for pavement related functionality in the Department's Asset Management System (AMS)	Team Leader	One (1) P.E.	5	P.E.	Demonstrate experience in both Asset Management System functionality and expertise in pavement management best practices.

HIGHWAY OPERATIONS Unit contact: Matthew Whitley (919) 835-8446

OPERATIONS PROGRAM MANAGEMENT mpwhitley@ncdot.gov

Discipline Code	Discipline	Description of Work	Key Personnel Required	Employee NC Registration Required	Minimum Years of Experience	Firm NC Registration Required	Additional Requirements
540	Maintenance Management Best Practices	Engineering support for maintenance related functionality in the Department's Asset Management System (AMS)	Team Leader	One (1) P.E.	5	P.E.	Demonstrate experience in both Asset Management System functionality and expertise in maintenance management best practices.